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NUCLEAR, BIOLOGICAL, AND CHEMICAL DEFENSE OPERATIONS
(FIRST DRAFT)

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NUCLEAR, BIOLOGICAL, AND CHEMICAL DEFENSE OPERATIONS

Contents

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Preface

Scope

This publication provides a multiservice doctrinal reference for planning and executing nuclear, biological, and chemical (NBC) defense operations. This doctrinal manual will bridge the gap between joint NBC defense doctrine (Joint Publication (JP) 3-11, *Joint Doctrine for Operations in Nuclear, Biological, and Chemical Environments*) and service operational NBC defense doctrine. The manual will address integration of multiservice doctrine on NBC defense in three areas: provide doctrine for planning NBC defense throughout the range of military operations; describe NBC defense capabilities from the services that could integrate into an area of operations (AO); and outline roles and responsibilities for NBC defense.

Purpose

The NBC Defense Operations publication will provide operational commanders, subordinate component commanders, and their staffs a single common doctrinal perspective for the planning and execution of service NBC defense operations. The target audience includes joint force and component commanders and their staffs, particularly those individuals responsible for NBC defense planning at the operational level. Commanders have direct responsibility for protecting their forces within an NBC environment. During operations, failure to properly plan and execute NBC defense operations may result in significant casualties, disruption of operations, and even mission degradation of NBC defense operations.

Application

This publication is designed for use at the operational level for planning and conducting integrated NBC defense operations. It supplements established joint doctrine and changes an Army and Marine Corps dual-designated publication into a multiservice publication, defines service capabilities in conducting NBC defense, and defines the roles and responsibilities of commanders and subordinate commanders and their staffs in planning and executing operational-level NBC defense.

User Information

The proponent for this publication is the United States Army Chemical School (USACMLS) who developed this publication with the joint participation of the approving service commanders. USACMLS will review and coordinate the update of this publication as necessary. Send comments and recommendations to: Commandant, U. S. Army Chemical School, 401 Engineer Loop, Suite 1029, ATTN: ATSN-CM-DD, Fort Leonard Wood, MO 65473-8926. Unless this publication states otherwise, masculine nouns or pronouns do not refer exclusively to men.

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Introduction

This field manual (FM) provides multiservice NBC defense doctrine for support of the operational and tactical levels of war. The publication is designed for use to support planning and conducting NBC defense operations.

Chapter 1 provides information on United States (US) national policy with regard to NBC weapons. The chapter also discusses the conditions of the battle space (NBC threat, physical, military, and civil) within which US forces may conduct operations. This chapter also addresses the operational environment and the range of military operations in conflict or military operations other than war (MOOTW) that could challenge US forces.

Chapter 2 discusses NBC defense challenges and the principles of NBC defense avoidance, protection, and decontamination that support operations of US forces in the US and overseas.

Chapter 3 examines command and control (C^2) considerations with regard to NBC defense, command relationships for NBC units, and command responsibilities for operations in an NBC environment.

Chapter 4 provides NBC strategic, operational, and tactical planning considerations and preparation of supporting plans for NBC defense.

Chapters 5-7 discuss the various phases of operations within which US forces could operate: peacetime preparedness, transition to operations, sustained operations, and support to conflict termination or post conflict operations. These chapters outline NBC defense actions that may be taken during each phase.

Chapter 8 provides information to support NBC defense considerations for rear area operations.

Chapter 9 discusses health service support (HSS) for support of military operations in an NBC environment.

Chapter 10, Military Operations Other Than War, outlines planning factors and NBC defense considerations for various forms of MOOTW operations: arms control, combating terrorism, etc).

Appendixes A-L provide supporting information for Chapters 1-7 as follows:

- Appendixes A-D outline suggested NBC capabilities and staff responsibilities for United States Army (USA), United States Marine Corps (USMC), United States Air Force (USAF), and United States Navy (USN) forces.
- Appendix E provides a universal joint task list (UJTL) summary.
- Appendix F indicates the NBC defense hierarchy inclusive of JP 3-11, *Joint Doctrine for Operations in NBC Environments*, and the supporting multiservice tactics, techniques, and procedures (TTP) manuals.
- Appendix G implements North Atlantic Treaty Organization (NATO) Standardization Agreement (STANAG) 2150 and provides suggested basic standards of proficiency for individuals (military and essential civilian personnel), units, and leaders.
- Appendix H implements STANAG 2984 and outlines the use of NBC threat conditions to support NBC defense preparedness.

- Appendixes I and J, briefly discuss NBC defense considerations with regard to air and space and maritime operations.

Chapter 1

Policy and Environment

US national policy is to seek a reliable, verifiable ban on production, stockpiling, and use of NBC weapons. To this end, the US strengthens international treaty, legal, and policy restrictions on proliferation, testing, possession, and employment of NBC weapons. While the US adheres to these restrictions, a number of potential adversaries may not adhere to them; thus, US strategy and policies concerning NBC weapons require continual update to protect the national interests of the US. Without such a ban, the US deters adversaries' development or use of NBC weapons through a balance of information activities and political, economic, and military measures. International cooperation through bilateral and multilateral treaty negotiations and treaties can help to limit an adversary's willingness to produce and use NBC weapons.

SECTION I – POLICY

US policy is to deter enemy NBC use through a strong nuclear force and an NBC defense posture that enables US forces to survive, fight, and win under NBC conditions. In shaping a peaceful international environment favorable to US interests, US policies and strategies are continually adopted to prevent and limit the proliferation of NBC capabilities. The current US national security strategy pursues three strategic goals: international security and stability, US economic prosperity anchored in a growing world economy, and democratic enlargement. The US approach to military operations is shaped by a set of principles that are derived from these national security and military startegies. The armed forces of the US support these policies and strategies within their respective areas of responsibility (AORs), and commanders organize and train to ensure their forces and supporting activities are prepared to advance and defend US interests. The overriding mission of the US armed forces is to deter war. Should deterrence fail, the US will pursue war to a successful conclusion. Should the enemy use NBC weapons, the US armed forces will respond with military operations, which may include nuclear and conventional weapons. The goal of these operations is to force the enemy to cease NBC warfare. The treaty, legal, and policy restrictions on NBC weapons are addressed under applications pertaining to nuclear weapons, chemical weapons, biological weapons, herbicides, and riot control agents (RCA).

STRATEGIC GUIDANCE

1-1. The US approach to military operations is shaped by a set of principles that are derived from national security and military strategy. These same principles guide military operations in NBC environments. These principles apply in war and MOOTW. In shaping a peaceful international environment favorable to US interests, US policies and strategies seek to prevent and limit the proliferation of NBC capabilities through international agreements and treaties, multilateral initiatives, and unilateral actions. The armed forces of the US support these policies and strategies within their respective roles and functions. Wherever proliferation has occurred, deterrence of an adversary's NBC weapons employment is a principal US national objective. To support deterrence, commanders must ensure that their forces and supporting facilities are visibly able to operate effectively in NBC environments. Should deterrence fail, US forces will need to survive, avoid or mitigate the effects of NBC employment, fight, and win in a contaminated battlespace. Key to operational success may be the ability of the joint task force (JTF) to eliminate or reduce the adversary's NBC capabilities with available and appropriate means; if necessary, employing means against the adversary from locations outside the theater. Commanders advancing and defending US interests conduct assessments of the feasibility and probability of US military involvement in crises and conflicts abroad. Consideration of NBC risks is integral to these assessments, including NBC use in the adversary's geographic region and in the US against civilian targets, military forces, and facilities needed to support the contemplated military operation. When developing theater strategies and plans to execute the national security and military strategies, as well as the Joint Strategic Capabilities Plan (JSCP), combatant commanders with geographic responsibilities should include specific guidance to ensure that their forces are able to sustain military operations in NBC environments.

NUCLEAR WEAPONS

1-2. The employment of nuclear weapons by the US is governed by guidance to the joint force commander (JFC) as contained in JP 3-12, *Doctrine For Joint Nuclear Operations*, and other National Command Authority (NCA) directives. The US may use nuclear weapons to terminate a conflict or war at the lowest acceptable level of hostilities. This is interpreted to mean that we may use nuclear weapons first. The US is party to treaties and international agreements that limit proliferation, testing, and possession of nuclear weapons. The Nuclear Non-Proliferation Treaty prohibits nuclear states from passing nuclear weapons, weapons technology, and weapons-grade fissionable material to nonnuclear states. The Strategic Arms Reduction Treaty between the US and Russia limits the number and type of strategic offensive forces. The Limited Test Ban Treaty limits US testing of nuclear devices. The Outer Space Treaty prohibits placement, installation, or stationing of nuclear weapons in orbit around the earth, in outer space, or on celestial bodies.

CHEMICAL WEAPONS

1-3. The US will never use chemical weapons. The "Geneva Protocol of 1925" prohibits the use in war of asphyxiating, poisonous, or other gases. Most parties interpret the protocol as a prohibition only of the first use of chemical weapons

in war. The *Presidential Statement on Chemical and Biological Weapons*, 25 November 1969, reaffirmed the renunciation of first use of chemical weapons and extended the renunciation to first use of incapaciting chemicals. In 1974, the US Senate gave advice and consent to ratification of the Geneva Protocol, subject to the reservation that the US would not be bound by the provisions with respect to an enemy state or its allies who fail to respect the prohibitions of the protocol. On 22 January 1975, the US ratified the protocol subject to this reservation. The protocol entered into force for the US on 10 April 1975 is subject to the Chemical Weapons Convention (CWC). The CWC, which entered into force for the US on 26 April 1997, bans the acquisition, development, production, transfer, and use of chemical weapons. It provides for the destruction of all chemical weapons stocks and production facilities within ten years after entry into force. The US ratified the CWC on 25 April 1997. Thus, the US will not use chemical weapons, but will try to deter enemy use or cease use of chemical weapons by conventional or other means.

BIOLOGICAL WEAPONS

1-4. The US will never use biological weapons. In addition to prohibition of use of chemical weapons, the "Geneva Protocol of 1925" also prohibits the use of bacteriological weapons. Likewise, the *Presidential Statement on Chemical and Biological Weapons*, 25 November 1969, renounced the use by the US of lethal biological agents, and confined biological research to defensive measures such as immunization and safety. Under the terms of the Biological Weapons Convention (BWC), parties undertake not to develop, produce, stockpile, or acquire biological agents or toxins of types and in quantities that have no justification for prophylactic, protective, or other peaceful purposes. The US ratified the BWC on 29 March 1975. Enemy use of biological agents against US or allied forces will justify a response with conventional or nuclear weapons.

HERBICIDES AND RCA

1-5. The US considers neither herbicides nor RCA as chemical agents, but has adopted policies concerning their use during armed conflict. Use of herbicides and RCA is covered by different policies than those governing chemical warfare (CW). Executive Order No. 11850, 8 April 1975, "Renunciation of Certain Uses in War of Chemicals, Herbicides, and Riot Control Agents," renounced first use of herbicides in war except for specified defensive use, and first use of RCA in war except for defensive military modes to save lives. The President must approve the use of RCA in tactical situations. Upon Presidential approval, herbicides may be used in areas under US control to control unwanted vegetation around defensive positions. In peacetime, the Secretary of Defense may authorize use of RCAs. The CWC, which was ratified by the US on 25 April 1997, prohibits the use of RCA as a method of warfare.

SECTION II – ENVIRONMENT (THREAT)

US forces face a potential NBC threat across a broad range of military operations. The number of nations capable of developing or possessing NBC weapons is steadily increasing. Many potential adversaries use former Soviet-

style equipment and doctrine. The potential use for chemical biological (CB) weapons can range from blackmail or acts of terrorism during peace to limited use during MOOTW, and even to large-scale use of NBC weapons during conflict or war. Despite worldwide efforts to eliminate NBC weapons, it is highly improbable that the threat will wane in the near future.

> *America's military superiority cannot shield us completely from the NBC threat. Indeed, a paradox of the new strategic environment is that American military superiority actually increases the threat of NBC attack against the US by creating incentives for adversaries to attack US asymmetrically.* (Secretary of Defense (SECDEF) Cohen Proliferation: Threat and Response; November 1997.)

2-1. The growth of NBC capabilities beyond those of major world powers has increased the likelihood of NBC use. The number of developing countries seeking the technology for nuclear weapons and advanced surface-to-surface missiles has increased. Since 1985, more than 25 countries are reported to have chemical weapons. NBC weapon employment doctrine for an adversary would likely be based on their sources of training, systems, and technological advances. Understanding the strategic context for conducting operations in an NBC environment is imperative. The term "NBC environment" includes the deliberate or accidental employment or threat of NBC weapons and attacks with other chemical, biological, or radiological materials, including toxic industrial materials (TIM). The employment and threat of NBC weapons and other toxic materials pose unique challenges to US military operations worldwide. Commanders have the responsibility to consider the implications of a potential adversary's NBC capabilities not only in a region of active conflict, but also in other regions, including the US. Potential adversaries who might possess NBC capabilities include emerging global adversaries, regional adversaries, and nonstate groups.

ADVERSARIES

GLOBAL

2-2. A global adversary could be a dominant regional power with an advanced economy and technology base. Such a state would have a program underway to field a full range of military capabilities, including NBC weapons, with the capability to project power beyond its geographic region.

REGIONAL

2-3. A regional adversary could be a state willing to threaten or employ military force to settle disputes contrary to international law. Regional adversaries may develop or possess NBC weapons to gain international prestige, threaten neighbors, or deter other regional or global adversaries. Such a state could project power beyond its state boundaries.

NONSTATE

2-4. Nonstate adversaries are likely to act without regard for the boundaries of established state authority. Such adversaries could possess or have access to a

range of conventional and NBC weapons and other toxic materials and the means to employ them by overt or clandestine means.

AVAILABILITY

2-5. The worldwide availability of advanced military and commercial technologies (including dual-use) and commonly available transportation and delivery means may permit adversaries to develop and employ NBC weapons and other toxic materials. Adversaries not party to an ongoing conflict may also seize an opportunity to hold US interests at risk for their own purposes, perhaps at locations beyond their geographic regions, including the US.

INCENTIVES

2-6. States may have incentives to acquire NBC weapons in spite of their adherence to international agreements and treaties forbidding such actions. Nonstate groups may not consider themselves bound by such agreements and treaties. State and nonstate groups alike may have incentives to operate outside the norms of acceptable international behavior, especially when important interests are involved. They may seek to overcome US and alliance or coalition strengths by focusing on vulnerabilities to the use of NBC weapons and other toxic materials. Commanders have the responsibility to consider the implications of a potential adversary's NBC capability not only in the adversary's geographic region, but also in other regions, including the US.

ADVERSARY OBJECTIVES FOR NBC USE

2-7. A global adversary could elect to employ NBC weapons in order to assure its success or delay its defeat in a regional conflict. A regional adversary may threaten with or use NBC weapons for coercion or aggression against US allies or other friendly states. Transnational and nonstate groups with NBC capabilities may pose similar threats abroad and to US territory.

OBJECTIVES

2-8. Broad adversary objectives for acquisition and employment of NBC weapons may include the capabilities to—

- Defeat, influence, intimidate, and deter a regional rival, and deter US intervention.
- Disrupt US and multinational forces and operations.
- Delay defeat by US and coalition forces in a region.
- Punish and inflict revenge on the US and multinational partners for their policies and actions to help assure regime survival.

VULNERABILITIES

2-9. Adversaries may employ NBC weapons to exploit US and multinational vulnerabilities. Civilian populations, physical infrastructures, and unwarned and unprotected military forces are especially vulnerable to attack by NBC weapons. Joint and multinational operations in areas where indigenous friendly populations have less protection than US forces present similar vulnerabilities.

ADVERSARY NBC EMPLOYMENT CONCEPTS

2-10. Adversary concepts for employment of NBC weapons may include selective use against US and multinational vulnerabilities. An NBC attack in a crisis or during a conflict could seek to secure advantages that avoid or overcome the strengths of US and coalition forces. An adversary could employ NBC weapons to impose terms of combat that are not easily overcome by US and multinational forces, such as holding vulnerable high-value targets at risk.

2-11. An emerging global adversary may acquire a sufficient NBC stockpile to establish credible deterrence against US intervention when no vital US interests are involved in a conflict. However, when faced with the uncertainty of US intervention, this adversary may act largely in the manner of a regional adversary and seek to avoid defeat and survive.

2-12. Regional adversaries, including those aspiring to regional ascendancy, may select employment concepts that delay defeat and seek reduction or elimination of US influence and presence in the region. These concepts may include NBC weapons employment directly against US and multinational capabilities early in a crisis to influence a US decision to forego intervention.

2-13. A number of regional adversaries operate routinely to violate the international norms of state conduct, often taking unpredictable, high-risk actions. Their employment concepts may include conventional and clandestine delivery of NBC weapons at the inception or later in the conflict.

2-14. Nonstate and terrorist groups typically operate outside the boundaries of state authority and without concern for the international norms of state conduct. They may use NBC weapons for the purpose of disruption, destabilization, coercion, or revenge against the US and its coalition partners.

THREAT AGENTS

2-15. One of the key facets of planning for NBC defense, given the large variety of potential agents and weapons, is to limit the agents and weapons under consideration to those most likely to be employed during the time frame of the period being addressed.

2-16. With regard to chemical agents, the primary concern is the use of persistent and nonpersistent nerve and blister agents in either solid or liquid form.

2-17. Biological agents are categorized as pathogens, toxins, and viruses. Of the three categories, pathogens and toxins may have a much greater influence on defensive measures. The time from exposure to maximum effects for pathogens and toxins generally ranges from a few hours to several days, and can be more lethal than toxins or CW agents.

2-18. The effects of nuclear weapons are qualitatively different from biological or chemical weapons. A nuclear detonation produces its damaging effects through blast, thermal energy, and radiation. In addition to the physical effects, common to any adversary use or threat of these weapons is the psychological effect, both in the immediate target area and in other vulnerable areas that may be potential future targets.

2-19. Although there are significant differences between nuclear, biological and chemical weapons, a common defense concern for all three types of weapons is some degree of residual contamination that is hazardous to humans. The mechanisms for dissemination of contamination differ in that nuclear weapons must undergo low-order detonations to produce radioactive contamination, whereas biological and chemical weapons either undergo low-order detonations or employ some other form of release mechanism to discharge the agent without destroying it.

THREAT ATTACKS

2-20. Delivery systems such as aircraft, cruise missiles, unmanned aerial vehicles/remotely piloted vehicles, and tactical ballistic missiles could be probable overt delivery methods for use against operational-level targets.. Other delivery systems such as artillery or missiles could be used to support adversary tactical operations. Covert releases using various aerosol-releasing devices would also be possible. Location, mobility, and defensive capabilities of US forces play a major role in determining the threats from nuclear and radiological, chemical or biological weapons.

NUCLEAR AND RADIOLOGICAL ATTACKS

2-21. Thirty years after World War II, nuclear weapons were the sole prerogative of five world powers: the US, Soviet Union, Great Britain, France, and China. The detonation of a nuclear device in India in 1974 marked the first instance of another nation joining the nuclear fraternity. Today, a variety of other nations, such as Pakistan, have developed nuclear weapons programs. Many nations are seeking access to the materials needed to produce nuclear weapons. Many nations known as aggressors to their neighboring countries are actively pursuing these capabilities. Many of these nations have delivery means for nuclear munitions; and means of delivery could include aircraft, cruise ballistic missiles, artillery, or clandestine employment. Adversaries may also employ toxic radioactive materials using explosives or other devices.

BIOLOGICAL WARFARE (BW)

2-22. Biological weapons have been characterized as the poor man's atomic bomb. Many biological weapons represent cheaper and less sophisticated alternatives to chemical, nuclear, and conventional weapons. BW agents can be produced with little difficulty in a relatively short time. They can be produced covertly using dual-purpose technology by those of modest education using limited tools and space. An adversary could use a production facility to manufacture prescription drugs one day and be producing BW agents the next day. In the last 20 years, an increasing number of Middle Eastern countries turned their attention to the development of BW agents. Using commercially available equipment and established microbiological techniques (perfected decades ago), several countries have rapidly assembled viable offensive BW programs that can easily be concealed. Other BW weapons characteristics make these agents particularly attractive for use. Certain BW pathogens such as smallpox and pneumonic plague are communicable diseases and can cause tremendous numbers of casualties. Further, the incubation period for biological

agents could also make them a weapon of choice against an unsuspecting force. Employment of biological agents can be conducted using means such as aerosol generators, aircraft, or missiles.

CHEMICAL WARFARE

2-23. Most countries do not have the technology or the resources to build nuclear weapons; however, many countries could produce chemical weapons. In the 1970s and 1980s, there was an increased emphasis on the development of chemical weapons in the Middle East. The actual use of chemical agents in warfare in the Iran-Iraq conflict soon followed. Chemical munitions require little more expense or expertise to manufacture than conventional munitions. The technology and literature are readily available on the world market. Once the decision is made to arm with chemical weapons, stockpiles can be rapidly produced. CW employment options include artillery, mortars, rockets, aircraft, and missiles, as well as covert use by terrorists.

2-24. Since the end of World War II, combatants have used chemical weapons in Yemen (1963 to 1967), Laos and Cambodia (late 1970s), Afghanistan (mid-1980s), and the Iran-Iraq War (late 1980s). In some cases, notably against large concentrations of untrained troops, chemical weapons have been credited for major successes. World censure of chemical weapons has been sporadic and ineffective.

2-25. Initially, developing nations' use of chemical weapons may be unsophisticated. The learning curve for use, even with military advisers, will be slowed by rudimentary training in basic skills. The combatants must learn to handle the logistics burden, friendly protection, weapons effects prediction, and difficulty in storage and handling.

2-26. An adversary, however, may not have the logistics or fire support capability to support an attack; he may reveal his intentions through intelligence indicators. Further, the threat of massive conventional retaliation may disrupt the striker's activities. We cannot predict whether or not a developing nation would use chemical agents against well-trained and well-equipped forces who have a devastating array of retaliatory options. From our perspective, a decision to use chemical weapons against US forces may seem ill-advised. However, politico-military decisions of this nature rarely follow predictable patterns.

OPERATIONAL USE

2-27. Operational level planners consider that an adversary may target the functions and services provided by our fixed sites. Our fixed sites will provide critical C^2, force projection, and sustainment capabilities for joint forces. The military environment of fixed sites includes strategic chokepoints, sustainment operations, complex C^2, and centers of gravity. The strategic projection of combat power may require air and sea ports of debarkation (PODs) and subsequent sustainment through the limited number of fixed sites available. The limited number of usable PODs may cause an unavoidable concentration of forces at these sites, creating a major target. Likewise, multiple services, activities, and organizational structures coupled with the presence of host nation (HN)/US civilians with less training in passive defensive measures than

combat forces further complicate C² at these sites. An enemy theater missile with an NBC warhead is a very efficient and effective means of quickly disrupting and/or halting the flow of information and resources to and from the fixed site. For example, nations with adequate stocks of chemicals could follow former Soviet doctrine and use persistent chemical agents to restrict air base and port operations. Persistent nerve and blister agents will delay the servicing of aircraft and ships and hinder cargo handling. Persistent agents at logistics facilities could impair resupply and service operations. Likewise, they will seriously delay medical care and the use of pre-positioned stocks.

TACTICAL USE

2-28. The proliferation of NBC weapons combined with the proliferation of ballistic and cruise missle technology pose an increasing threat to off-shore facilities, rear areas, fixed sites, and forward areas. Since each of the NBC weapons can be delivered by ballistic missiles, precision guided munitions, or covert devices, the threat environment extends throughout the depth of the battle space and continues to the force projection base. Developing nations' combatants with adequate chemical stocks who use former Soviet doctrine would likely employ nonpersistent agents against front-line troops and on avenues of approach. They would be inclined to use persistent agents on bypassed troops, strong points, and flanks. They may use persistent or nonpersistent chemicals in barrier and denial plans. With small stockpiles, however, they may use biological or chemical weapons selectively to support a critical attack or defense, particularly against massed troops or potential staging areas. Some of these nations place a different value on human life than we do, and display a willingness to use chemicals against civilian populations. The use of biological or chemical weapons against an unprotected populace would impact US and allied forces, both politically and militarily. Competition for scarce medical resources and increased refugee flow on main supply routes (MSRs) are just a few of the difficulties planners must consider. The possibility of use of biological or chemical weapons by terrorist groups must not be overlooked. US forces must prepare for any adversarial use of biological or chemical weapons. Any country with a chemical or pharmaceutical industry can produce chemical or biological weapons. Nation-states inclined to weaponize these substances may hide their production behind the guise of pharmaceutical or industrial chemical facilities.

SCENARIO—IRAQ'S CAPABILITIES

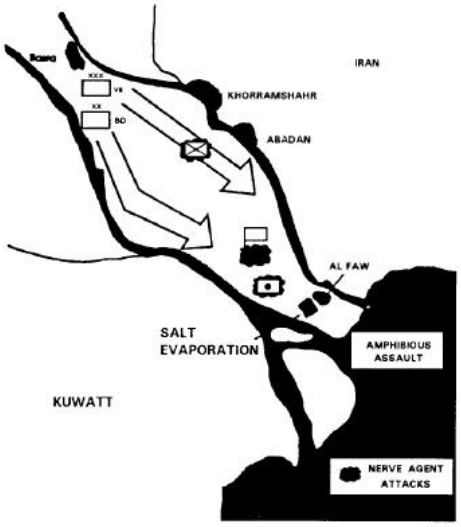
2-29. In over eight years of military operations against Iran, Iraq built a military force committed to large-scale combined arms operations that included the integration of chemical weapons. Iraq's success radically changed the style of warfare in the Middle East. They were tactically capable of using chemical weapons by all means to include artillery, rockets, helicopter fire, aerial bombs, and possibly by tactical ballistic missiles.

2-30. To avoid defeat, Iraq sought out every possible weapon. This included developing a self-sustaining capability to produce militarily significant quantities of CW agents. In the defense, integrating chemical weapons offered a solution to the massses of lightly armed Basif and Posdoran personnel. Chemical weapons were singularly effective when used on troop assembly areas and supporting artillery. When conducting offensive operations, Iraq routinely

supported the attacks with deep fires and integrated chemical fires on forward defenses, command posts, artillery positions, and logistical facilities. The impact of the use of chemical weapons is clearly demonstrated in Figure 1-1. Iraq continued development of its CW capability and later added an offensive BW program. Iraq acquired equipment and materials under the cover of pesticide production to establish the Samarra Chemical Weapons Production Complex. At Samarra, Iraq produced sulfur mustard and later the nerve agents Tabun (GA) and Sarin (GB).

HISTORICAL VIGNETTE

In April 1988, Iraq began Operation "Blessed Ramadan" to retake AL Faw peninsula. The attack began on the morning of 17 April. Armored forces of the Republican Guard conducted the main attack. The Iraq 7th Corps conducted a supporting attack along the west bank of the Shatt al-Arab waterway. The Iraqi's also conducted two amphibious assaults along the western coast of the peninsula, the Iraqi plan called for a three-phase operation lasting four to five days. The employment of chemical agents was an integral part of the Iraqi plan. Nonpersistent nerve agent was used on the defending Iranians. Reports indicated that front line forces, command and control sites, and artillery positions were targeted.



Both artillery and aircraft delivered the chemical agent on the intended targets. Only 35 hours were required to complete the operation. The Iranians never recovered from the initial assault and were unable to reestablish an effective defense. The Iranian retreat across the Shatt al-Arab waterway turned into a complete rout, with the Iranians abandoning most of their equipment. The Iraqis did not win this battle solely by employing chemical weapons, but their impact was significant. The employment of chemical weapons in this battle caused casualties, disrupted operations, hindered battle command, and allowed the Iraqis to retain the initiative throughout the attack.

Lessons from the Iraq-Iran War show that the employment of chemical weapons did have tactical significance during several battles. One analyst felt that the employment in the Iran-Iraq War was an example of "low level, sporadic use of chemical weapons. He concluded that "this was far less devastating to those involved than it might have been or could be in a future conflict." Yet, this limited usage was a major contributor to Iraq's successes against an otherwise superior force. The Iraq use of chemical weapons during its war with Iran clearly demonstrates the impact that NBC weapons can have on the battlefield.

Figure 1-1. Battle for Al Faw, April 1988

2-31. In July 1995, Iraq admitted to conducting an offensive BW program. In August 1995, Iraq admitted it had filled aerial bombs and missile warheads with the BW agents botulinum toxin and anthrax. Iraq also produced ricin and T2 mycotoxin and researched smallpox. The intended targets could have been Israel or other coalition forces. While the Iraq BW infrastructure was damaged in Operation DESERT STORM, critical BW equipment was hidden, and Iraq could possibly resume BW weapons production.

2-32. When coalition forces deployed in Operations DESERT SHIELD/DESERT STORM, Iraq possessed a flexible arsenal of CBW agents and delivery means. Iraq's CBW production facilities were priority targets. There is much speculation on why Iraq did not use chemical weapons, however, deterrence was effective through use of active and passive measures to deter Iraqi use of CB agents.

TOXIC INDUSTRIAL MATERIALS

2-33. TIM hazards, previously considered insignificant during wartime, increase greatly in significance when manufactured, stored, distributed, or transported in close proximity to fixed sites, ports, or airfields. Deliberate or inadvertant release during MOOTW significantly increases hazards to indigenous population and US forces. While CW agents are highly toxic and lethal in small amounts, the countries that produce them are generally known and are few in number when compared with the quantities and universal nature of TIM. TIM should be recognized for the single hazard they pose as well as the potential risks that may result from explosion or fire. Most TIM will present a vapor (inhalation) hazard. Vapor concentration at or near the point of release may be very high and may reduce the oxygen concentration below that required to support life. TIM are generally classified in one of the following categories:

- Agricultural—includes insecticides, herbicides, and fertilizers.
- Industrial—chemical and radiological materials used in manufacturing processes or for cleaning.
- Production and Research—chemicals and biological materials produced or stored in a facility.
- Radiological—nuclear power plants, medical facilities, and laboratories.

BHOPAL INCIDENT

2-34. To illustrate the potential for disaster from an incident associated with TIM, the Bhopal India Incident is a classic study. On December 3, 1984, over 40 tons of Methyl Isocyanate and Hydrogen Cyanide leaked from a pesticide plant at the northern end of Bhopal into the surrounding city of one million people. The leak was caused by a series of operator errors. These chemicals are but two of the many extremely toxic industrial chemicals (TIC) that are manufactured and stored in facilities across the world. Bhopal has been called the "Hiroshima of the Chemical Industry." At least 15,000 people have died from injuries related to this incident, with an estimated 6,000 having died that first night. Over 600,000 people have injuries as a result of the incident. The potential for a terrorist-induced incident of this nature must be considered.

PLANNING CONSIDERATIONS

2-35. Given the prevalence of TIM throughout the world, a future threat to US military forces could include TIM hazards. Area studies, intelligence estimates, and/or economic studies may indicate potential TIM hazards in the AO. All levels of command use intelligence preparation of the battle space (IPB) analysis to assess the existence and status of TIM hazard areas.

SECTION III – OPERATIONAL ENVIRONMENT

A variety of crisis and conflict situations may emerge in the international security environment to challenge US interests. These situations encompass disputes and hostilities between and among states, coalitions of states, and nonstate groups (including regional, ethnic, religious , and criminal entities.). These crisises and conflicts may threaten regional stability, the territory and populations of the US, its allies, coalition partners , and other friendly states, democratic processes, economic progress, and a range of other US interests. These challenges can occur simultaneously in a number of regions. Their implications can transcend state and regional boundaries. Military involvement to advance and protect US interests in these situations may include combat operations and MOOTW such as peace operations, foreign humanitarian assistance, and other military support to civil authorities (MSCA). This environment presents numerous opportunities for US military operations to encounter antagonists possessing NBC weapons or toxic materials.

GENERAL

3-1. Contemporary threats faced by the armed forces of the US are more ambigious and regionally focused than during the Cold War. Combatant commanders may confront a variety of factors that challenge the stability of countries and regions and threaten US national interests and security within their AORs. These instabilities can lead to increased levels of competition, a wide variety of attempts at intimidation, drug trafficking, insurgencies, regional conflicts, and civil war. It is difficult to predict which nations or groups may threaten our interests and how and when such threats will emerge. Yet, such predictions should be attempted, with a process that allows for rapid dissemination of strategic estimates.

CHALLENGES

3-2. Even in times of relative peace, combatant commanders will be challenged by regional factions seeking to expand their influence by coercion or force. Some of these potential opponents have large, modern, conventional military forces equipped with high-quality systems comparable to those of the armed forces of the US. An adversary's possession of weapons of mass destruction (WMD); ballistic and cruise missiles, relocatable systems; hard and deeply buried facilities; and viable air, land, naval and special operations forces (SOF) and space capabilities constantly challenge a combatant commander's ability to deter armed conflict and, if necessarry, to fight and win.

3-3. Regional challenges will often involve an adversary whose system of beliefs interprets differently such fundamental ideas as right and wrong, the value of human life, and the concepts of victory and defeat. What appears to be fanatical to US forces may be completely rational to our opponent. Understanding cultural differences is important if friendly forces are to reestablish the military condition necessary to achieve strategic goals.

TOXIC INDUSTRIAL MATERIALS

3-4. The employment or threat of NBC weapons and other toxic materials pose unique challenges to US military operations worldwide. The disruptive and destructive effects of these weapons and materials merit continuous consideration by the JFC and supporting commanders. In addition to the employment of NBC weapons by a threat force, commanders must be alert to equally dangerous hazards that can persist in the AO. Prevalent among those hazards are Low-Level Radiation (LLR), Depleted Uranium (DU), TIC, and biological agents (covertly or accidentally dispersed). LLR threat can exist in certain expended munitions, damaged or destroyed equipment, or contaminated shrapnel, as well as inadequate nuclear waste disposal, deterioration of nuclear power facilities, or damage to facilities that routinely use radioactive material. LLR produces long-term radiation exposure health consequences for personnel. DU found in munitions does not present significant hazards as long as the round is intact. However, care must be taken around vehicles that have been hit by these rounds, because inhalation and ingestion exposures present serious health hazards. TIC are often present in enomorous quantities in the AO, and can be released from industrial plants or storage facilities through battle damage or as a desperation measure during military operations. Any military mission is virtually assured to encounter TIC in large quantities. Further, an enemy with a modest biological or production base (such as in the pharmaceutical or brewing industry) can produce biological agents. These agents lend themselves well to covert use in that small quantities are needed. They are easily concealed and cheap to produce.

FORCE PROJECTION

3-5. In the current operational environment, forces are most vulnerable and operations are at greater risk during the initial phase of force projection operations. For example, fixed sites provide critical functions that support force projection and sustainment. Multiple activities, complex organizational structures, and varying levels of expertise in passive defense measures during deployment combine to make NBC defense a challenging task. Our forces require protection from these TIM as well as NBC hazards from industrial facilities near airports of debarkation (APODs) and sea ports of debarkation (SPODs). Commanders have direct responsibility for protecting their forces against these hazards. Commanders' mission and execution plans must address the implications if NBC weapons are used at critical force projection chokepoints, specifically PODs. As forces enter the theater, vulnerability concerns heighten significantly. Protecting the force is of equal or greater concern during forced entry operations as well as offensive or defensive operations. Force projection generally originates from the continental United States (CONUS) or from an ally (e.g. NATO). Although still vulnerable, ports of

embarkation (POE) at the projection base offer an advantage by allowing additional security, flexibility, and standoff. Therefore, enemy NBC weapons targeting efforts will likely focus on the more PODs. NBC weapons employed against APODs and SPODs and forces not yet deployed to forward AOs can create significant casualties and bottlenecks in the resource pipeline. During entry operations, combat power is extremely vulnerable while at or around the POD.

SECTION IV – MAINTAINING PREPAREDNESS

Maintaining military preparedness in peacetime for potential operations in NBC environments demands clear understanding of the threats and unity of effort in the US and abroad. Threat assessment includes overseas areas of potential conflict as well as US territory, with particular attention to the civilian infrastrucutre, military forces, and facilities needed to support the range of military operations. Peacetime preparedness includes visibly and successfully exercised joint, multinational, and interagency plans that demonstrate the capability to operate and succeed in NBC environments.

RANGE OF MILITARY OPERATIONS

GENERAL

4-1. Varied and unpredictable challenges to US interests in the international security environment place special requirements on the armed forces of the US. Maintaining adequate preparedness in peacetime to facilitate rapid transition to operations is a responsibility shared by services, combatant commands (COCOMs), subunified commands and supporting services. The services and USSOCOM have the primary responsibility for organizing, training, and equipping forces for the full range of potential operations. COCOMs have responsibilities for organizing joint training, and integration of force elements provided by the services and USSOCOM to meet peacetime, war and MOOTW requirements. The fundamental elements needed for maintaining adequate preparedness are a clear understanding of the threats and operational requirements, both overseas and in the US. To support these requirements, commanders' mission analysis identify specific, mission-essential tasks for individuals and organizations that facilitate operations in NBC environments.

MOOTW NOT INVOLVING THE USE OR THREAT OF FORCE

4-2. Prudent use of military forces in peacetime helps to support deterrence and keep tensions between nations below the threshold of armed conflict and maintains US influence in foreign lands. Such operations include arms control and disaster relief, nation assistance, support to US and foreign civil authorities, evacuation of noncombatants, and peacekeeping. Such operations are typically joint in nature and may involve forward-presence forces or units deployed from another theater, CONUS, or a combination of both. These operations, by definition, do not involve combat, but military forces always need to be prepared to protect themselves and respond to a changing situation.

MOOTW INVOLVING THE USE OR THREAT OF FORCE

4-3. In spite of efforts to promote peace, conditions within a country or region may result in armed conflict. The general goals of US military operations during such periods are to support national objectives, such as deterrence, deter war, and return to a state of peace. Combatant commanders, at the discretion of the NCA may employ US forces to deter an adversary's action, and combatant commander's IPB assesses the potential for enemy use of NBC weapons.

WAR

4-4. When other instruments of national power (diplomatic, economic and information) are unable or inappropriate to achieve national objectives or protect national interests, the US national leadership may decide to conduct large-scale, sustained combat operations to achieve national objectives or protect national interests. In such cases, the goal is to win quickly and with as few casualties as possible, achieving national objectives and concluding hostilities on terms favorable to the US and its multinational partners.

PREPAREDNESS IN THE US

4-5. The nature of the international security environment and the worldwide NBC threat have implications for peacetime preparedness in the US. The peacetime programs of the services and United States Special Operations Command (USSOCOM) must enable an adequate and rapid transition of the armed forces of the US, including the reserve components, to operations to meet the urgent needs of emerging crisis or conflict situations.

4-6. Commanders of forces and facilities in the US are responsible for assessments of vulnerabilities that may compromise peacetime preparedness, given the NBC threat and the potential utility to state and nonstate actors of NBC attacks against US civilian and military targets.

4-7. Commanders must maintain current assessments of the NBC vulnerabilities in the US, integrating their efforts with other United States government (USG) agencies, including appropriate law enforcement and intelligence organizations. Of particular importance are facilities essential to training, staging, and deploying, including airports of embarkation (APOEs) and seaports of embarkation (SPOEs) and essential USG and civilian transportation and related infrastructure.

4-8. Peacetime planning and supporting actions must include plans to minimize vulnerability to and mitigate the effects of NBC attacks in order to maintain required force preparedness. Combatant commander and supporting planning produces Joint Mission-Essential Task Lists (JMETL) that must include appropriate elements to facilitate operations in NBC environments.

4-9. The key tasks to be undertaken in the US in order to reduce the vulnerability of US forces to NBC attacks are enforcing operational security (OPSEC), maintaining emergency NBC response plans, assuring redundant force capabilities, maintaining effective NBC defense equipment (NBCDE), and conducting joint and interagency planning, training, and related preparation.

SECTION V – LEVELS OF WAR

The levels of war are doctrinal perspectives that clarify the links between strategic objectives and tactical actions. Although there are no finite limits or boundaries between them, the three levels in general are strategic, operational, and tactical. They apply to both war and MOOTW. levels of command, sizes of units, types of equipment, and types of force or components are not associated with a particular level. Actions can be identified as strategic, operational, or tactical based on their effect or contribution to achieving strategic, operational, or tactical objectives. Advances in technology, information age media reporting, and the compression of time-space relationships contribute to the growing interrelationship between the levels of war. The levels of war help commanders visualize a logical flow of operations, allocate resources, and assign tasks to the appropriate command. However, commanders at every level must be aware that in a world of constant, immediate communications, any single event such as enemy use of NBC weapons may cut across the three levels.

THE STRATEGIC LEVEL

5-1. The strategic level is that level of war at which a nation, often as a member of a group of nations, determines national or multinational (alliance or coalition) strategic security objectives and guidance and develops and uses national resources to accomplish these objectives.

5-2. Activities at the strategic level establish national and multinational military objectives, assess risks for the use of military and other instruments of national security policy, develop theater plans to achieve these objectives, and provide military forces and other capabilities in accordance with strategic plans.

5-3. At the strategic level of war, the national military strategy is based on defense and deterrence. Elimination of the threat of NBC warfare is a clear strategy of the US and a viable NBC defense program helps to deter aggression, pursue arms control agreements, prevent proliferation, and repel or defeat enemy attack. These strategic efforts help demonstrate to an adversary that US forces would be minimally affected by the use of these weapons.

THE OPERATIONAL LEVEL

5-4. The operational level links the actual employment of forces to strategic objectives. The focus at this level is on operational art: the use of military forces to achieve strategic goals thriough the design, organization, integration, and conduct of strategies, campaigns, major operations, and battles. Operational art determines when, where, and for what purpose major forces will be employed and should influence the enemy disposition before combat.

5-5. Operational art helps commanders use resources efficiently and effectively to achieve strategic objectives. It provides the framework to assist commanders in ordering their thoughts when designing campaigns and major operations. Operational art helps commanders understand the conditions for victory before seeking battle, thus avoiding unnecessary battles.

5-6. Among many considerations, operational art requires commanders to consider the following:

- Ends—What military (or related political and social) conditions must be produced in the operational area to achieve the strategic goal (i.e. deterrence of an enemy's NBC weapons employment)?
- Ways—What sequence of actions will support surviving, avoiding, or mitigating the effects of an NBC environment?
- Means—How should the resources of the joint force be applied to accomplish eliminating or reducing the adversary's NBC capabilities?
- What is the likely cost or risk to the joint force of operating in an NBC environment?
- What resources must be committed or actions performed to successfully execute the JFC's exit strategy (i.e., support for arms control, peacekeeping, etc.)?

THE TACTICAL LEVEL

5-7. At the tactical level, the size and location of the battle space are influenced by the physical location of adversary land, air, naval, space, and other forces that could pose a direct threat to the security of the friendly force or the success of its mission.

5-8. Tactics refers to the employment of units in combat. It includes the ordered arrangement and maneuver of units in relation to each other and/or to the enemy in order to use their full potential.

5-9. At the tactical level, units use NBC defense and medically related TTP to avoid, protect, and decontaminate.

SECTION VI – ORGANIZATION OF OPERATIONAL AREA

To assist in the coordination and deconfliction of joint action, JFCs may define operational areas. The size of these areas and types of forces employed within them depend on the scope and nature of the crisis and the projected duration of operations.

OPERATIONAL AREAS

6-1. Within the operational area's combat and communications zone (COMMZ), the JFC continually assesses enemy capability. In-depth assessments of the enemy's offensive NBC capability and intentions are necessary for the targeting to support destruction of enemy capability; but the uncertainties associated with accomplishing destruction of an adversary's NBC capability within an operational area make it essential that the JMETL include NBC defense.

JOINT AREAS

6-2. For operations somewhat limited by scope and duration, JFCs can use the operational areas to minimize the impact of NBC weapons. The JFC may

consider using operational areas to achieve positional advantages such as a positioning assets beyond the threat range, identifying relocation sites, and deploying redundant critical assets. Remote basing in an operational area could be used to protect critical weapons systems (e.g., F117) from contamination or destruction. Relocation and dispersal and redundancy of sites within operational areas offer another alternative if an enemy NBC attack should prevent or restrict operations at primary sites.

SECTION VII – CONDITIONS OF THE BATTLE SPACE

The operational setting for US military operations is a diverse and complex environment. This diverse condition includes the physical, military, civil, and threat (see Section II) environments. First, by function, NBC defense operations can impact each aspect of the physical battle space: air, land, maritime, and urban. Secondly, US military operations are inherently joint and will likely include JTF operations. Thirdly, in addition to the physical and military environments, military operations (especially aerial and port operations) may occur within the complex framework of the HN? and the civil environment. Commanders will use these four conditions of the operational environment as planning considerations for inclusion in joint/multiservice plans and exercises.

PHYSICAL ENVIRONMENT

7-1. The physical battle space directly impacts site operations and the physical environment directly influences NBC operations. NBC weapons can impact force projection and combat operations on land, at sea, and/or in the air. Further, the nuclear component of NBC could also impact the space environment, and C? networks that rely on this dimension would be severely degraded. Still, notable influences of the physical environment on NBC defense operations include air, land, maritime, and urban considerations.

MILITARY ENVIRONMENT

7-2. The military environment includes settings such as strategic chokepoints, sustainment sites, complex C^2, and centers of gravity.

CIVIL ENVIRONMENT

7-3. The culture and economic aspects of the civil environment that significantly influence NBC defense considerations include religious, national, and ethnic values, and economic industrial/technological capabilities.

Chapter 2

NBC Defense Challenges

This chapter addresses the NBC defense challenges for US forces. Section I addresses a multitiered approach to counter the NBC threat before, during, and after an NBC attack. These measures include proliferation prevention, counterforce operations, and active and passive defense operations which are vital to counter the NBC threat across the full range of military operations. Sections II—V address NBC defense principles and the medical aspects of NBC defense, respectively.

SECTION I - COUNTERPROLIFERATION

A balanced and integrated strategy of proliferation prevention, counterforce operations, and active and passive defense efforts are vital in deterring the NBC threat across the full range of military operations. As shown in Figure 2-1, a balanced and integrated approach to deter the proliferation of NBC weapons begins with proliferation prevention through arms control measures such as export controls and treaty agreements. Next, this integrated strategy uses counterforce operations against NBC weapons and their associated delivery, production, and storage facilities prior to their use, which enables the JFC to reduce the NBC threat to friendly operations. Failing that, interception of conventional and unconventional delivery through active defense provides the next set of measures to help reduce the NBC threat. Finally, maintenance of a strong passive defense capability to survive and operate when exposed to an NBC attack reduces the utility of NBC weapons. At best, operational tempo (OPTEMPO) will be reduced along with individual personnel effectiveness as operations are degraded by IPE and contamination control measures.

PROLIFERATION PREVENTION

1-1. Proliferation prevention uses means such as arms control to deny attempts by would-be proliferants to acquire or expand their NBC capabilities (weapons and delivery systems) by providing: inspection, verification, and enforcement support for nonproliferation treaties and NBC control protocols; supporting export control activities; assisting in the identification of potential proliferants before they can acquire or expand their NBC capabilities; and, if so directed by the NCA, planning and conducting attack missions during peacetime. The US has the unique capabilities to detect the possession or development of some NBC weapons. For example, intelligence, surveillance, and reconnaissance (ISR) systems enable the gathering of information on the development and possible deployment of NBC weapons. Inspection, verification, and enforcement tasks are conducted with other service and government agencies. Many of these programs

are hard to identify due to their integration into civilian industry. Ballistic and cruise missile delivery systems receive emphasis due to their capability to project beyond state boundaries and to penetrate traditional defenses. Proliferation prevention activities include support to the Treaty on Open Skies, visits to support weapons convention provisions, and on-site inspections. A robust proliferation prevention effort can help preclude the requirement to apply military force and reduce the likelihood of an attack on US civil or military interests within or outside the US. Proliferation prevention also helps deter the threat by convincing potential and actual proliferants that NBC weapons will be of no value because US and/or multinational partners will deny or limit their political or military advantage due to NBC defense readiness and because our possible retaliation would far outweigh any benefits of use.

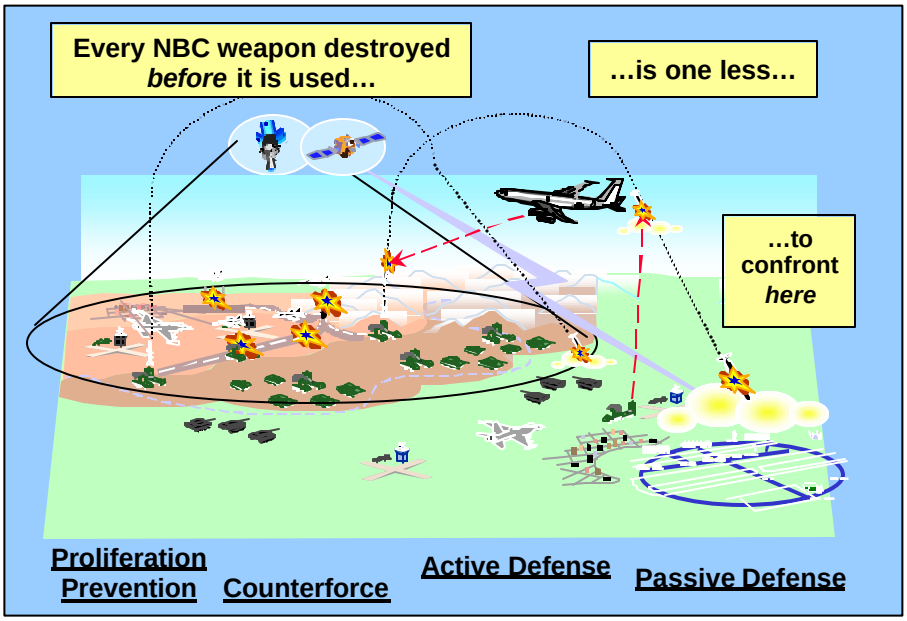


Figure 2-1. Balanced and Integrated Approach to NBC Defense

COUNTERFORCE OPERATIONS

1-2. Counterforce operations are intended to destroy an adversary's offensive NBC systems before they can be used against friendly forces or to lessen the effects of such systems. Attack operations could include measures such as counterair, counterland, or strategic attack against an adversary's NBC capabilities. Preempting an NBC attack, especially against missiles or aircraft, often requires that operations be conducted on short notice over extended ranges and with precision weapons. The speed, range, and versatility of our military forces enable rapid reaction to changing situations, targets, and environments. Advanced technology "precision-guided" weapons enable precise targeting with minimal collateral damage. Targets are frequently mobile and dispersed, or are maintained in hardened and deeply buried shelters and only vulnerable to direct attack for very short periods of time. C^2 procedures must be in place to allow quick reaction as targets are identified, and attacking forces may have to be

maintained in a heightened state of readiness such as airborne or strip alert. ISR systems must focus on threat areas and collection priorities adjusted to facilitate rapid location of NBC elements. The release of NBC agents during counterforce operations can cause collateral damage and must be considered when planning targets. A wide variety of forces and weapons can be used to conduct attack operations, from wide area munitions for attacks on dispersed terrorist or military installations to high-precision, earth-penetrating weapons for hardened and buried production and storage facilities.

ACTIVE DEFENSE

1-3. Active defense operations encompasses actions to destroy enemy NBC weapons and delivery vehicles after they are launched or are enroute to their targets, but before they reach their intended targets. This activity is comprised of defensive operations against aircraft, ballistic missiles, and cruise missiles such as defensive counterair (DCA). Active defense also encompasses force protection against SOF, unconventional warfare, and terrorists employing NBC weapons. While fixed bases may offer the advantage of hardened and prepared defenses, they are also susceptible to attack which mobile forces might minimize or avoid. Layered defenses may be employed to provide more than one line or means of defense at varying distances from likely targets (deep and intermediate area defense, and close or point defense) with each layer destroying more of the attacking force. The goal is to weaken (or avert) the adversary's strike to the point that passive defenses can counter the effects of the NBC weapons on friendly operations. Emphasis is placed on destroying attacking weapons as early or as deep as possible while they are still over enemy territory, and warning information is passed to affected areas/units.

PASSIVE DEFENSE

1-4. Passive defense operations provide actions that are focused on preventing NBC casualties through medical pretreatments, contamination avoidance, and physical protection. Passive defense is necessary to provide essential individual and collective protection (CP) for friendly forces, population centers, and critical assets. Passive defense measures should be planned whenever US forces might face a threat that has a theater ballistic missile (TBM) capability. By examining various combinations of TBM warhead accuracy and effects, numbers of available missiles, and the enemy targeting process, the likelihood and timing of an attack may be predicted and passive measures selected for employment before, during, and after a TBM attack. Further, principal defense measures to accomplish passive defense are depicted in Figure 2-2.

TACTICAL WARNING

1-5. Geographic combatant commanders are responsible for establishing theater event reporting systems to acquire, process, and disseminate warning information to joint force components and population centers. They are also responsible for implementing tactical event system architectures into local operations and intelligence nets. Component commanders are responsible for providing warning to assigned forces. Tactical warning triggers passive defense actions. Warnings are both general (that missile launches are imminent or have occurred) and specific (that specific units or areas of the battlefield or theater

are in danger of attack). The geographic combatant commander's tactical warning requirements are supported by national and theater intelligence systems.

Figure 2-2. Principal Measures For Passive Defense

1-6. The commander's command, control, communications, computers, and intelligence (C^4I) system supports the warning system. Strategic warning is accomplished through ongoing intelligence collection and analysis of the threat. Tactical warning is provided to the components over the geographic combatant commander's early warning net and used to dictate the local readiness posture.

1-7. The geographic combatant commander's early warning net should link space-, air-, and surface-based sensors (both national and theater) that detect missile launches or track missiles in flight. Warning data should be transmitted immediately to appropriate commands and, if known, to targeted units and civilian authorities. TBM defense reaction plans should be included as part of emergency action checklists. Warning times associated with TBM attacks are minimal because of short missile flight times and difficulty of detection. Regardless of time available, warning is required to allow for the use of all possible protective measures for exposed personnel and equipment. Effective communications are essential to provide the information required at each level to support the execution of passive defense measure plans.

REDUCING TARGET EFFECTIVENESS

1-8. JFCs and component commanders are responsible for protecting forces against the effects of missile attack through measures such as operations security, deception, and mobility. Communications security, signature reduction, and security aspects of OPSEC deny enemy sensor and

reconnaissance assets timely acquisition and identification of friendly targets. Signature reduction measures (i.e., camouflage, commonality of vehicle appearance), and local unit security are important elements in denying accurate targeting data to an enemy. Deception misleads enemies by manipulating, distorting, or falsifying friendly actions. This can cause enemies to deplete their TBM resources by attacking false targets through the use of decoys, missing intended targets, and denying them accurate battle damage assessments. Mobility reduces vulnerability and contributes to survivability of certain systems by limiting exposure to reconnaissance and targeting.

REDUCING VULNERABILITY

1-9. JFCs and component commanders also direct measures such as hardening, achieving redundancy, dispersal, and training civilian authorities. For example, hardening reduces the effect of attack on systems and facilities (i.e., aircraft and air base support equipment). Hardening should be accomplished or begun in peacetime. However, political and fiscal constraints may preclude certain prehostility hardening measures, such as construction of fixed fortifications. Protection for mobile ground forces and equipment may be best accomplished by careful site selection, field fortifications, and other field-expedient methods. Further, another principal means of preserving combat power is duplication of critical capabilities that are particularly vulnerable to TBM attack and for which other passive measures may be less appropriate. Of primary concern are "soft" targets such as C^2 nodes and sensors, and fixed sites such as airfields and ground stations for airborne sensors. Measures such as achieving redundancy of capability or dispersal reduces target vulnerability by decreasing concentration and makes targets less lucrative. Combined with mobility and deception, dispersal increases enemy uncertainty as to whether a particular location is occupied.

NBC DEFENSE

1-10. The elements of passive defense against NBC weapons are contamination avoidance, protection, and decontamination. These form a hierarchy that protects the force, sustains operational effectiveness, and minimizes casualties. Units employ detection and NBC reconnaissance to avoid contamination, thus minimizing or eliminating NBC casualties, mission performance degradation, and logistical intensive decontamination requirements. If units fail to avoid being attacked or contaminated with NBC weapons, they use individual and CP to sustain operations and reduce the impact of NBC weapons on the unit. Individual protection uses physical protection devices, medical immunization and prophylaxis, and NBC casualty medical treatment. CP provides relief from sustained operations in full NBC protective equipment, shelters sensitive equipment not easily decontaminated, and provides clean environments for operations that cannot be performed under NBC-contaminated conditions. Decontamination removes NBC hazards from personnel and equipment, minimizes the hazard and spread of contamination, and facilitates the prompt restoration of normal operations (see Section II for a detailed discussion of these NBC defense principles).

RECOVERY AND RECONSTITUTION

1-11. Following an attack, units should be restored to a desired level of combat effectiveness commensurate with mission requirements and available resources. Reconstitution may include reestablishing or reinforcing C^2; reallocating or replacing communications, personnel, supplies, and equipment; conducting essential training; reestablishing unit cohesion; and repairing battle damage. In some instances of mass devastation, whole unit replacement may be necessary.

INFORMATION MANAGEMENT (IM)

1-12. Information operations (IO) or IM refers to the processes a JTF uses to obtain, manipulate, direct, and control information. IM includes all processes involved in the creation, collection and control, dissemination, and storage and retrieval of information. The goal of IM (for support of NBC defense) helps to ensure a timely flow of quality information. The flow of critical information supports the JTF's situational awareness and ability to anticipate the consequences of an NBC environment.

SECTION II - INFORMATION MANAGEMENT

2-1. NBC situation awareness of the operational environment allows the JTF to anticipate future conditions, formulate concepts of operations, analyze courses of action (COAs), and accurately assess risks.

2-2. Graphic depictions of NBC hazard estimates, vulnerability assessments, contaminated area plots, etc. with text files (messages, reports, etc.) provide the commander a common tactical picture (CTP) versus sole reliance on mapboards and overlays. Often the graphic and text information combined with military experience enable the commander to make timely avoidance or protection decisions.

2-3. IM plays a key role in building situation awareness. The NBC staff provides needed information as an input to the decision-making process to focus on what the commander needs and when it is needed, and presenting the information in a usable format to complete the decision-making process.

2-4. The NBC staff supports IM through considering and applying key information quality characteristics. The information provided must be accurate, relevant, timely, usable, complete, and succinct.

2-5. The exchange of NBC-related information uses IM procedures that provide for the rapid flow—vertical and horizontal—of information. The flow of NBC-related information across the JTF headquarters staff requires a cross-functional and cross-directorate exchange of information. (See Figure 23 for information on those processes that contribute to an effective flow of information.)

2-6. To support NBC situation awareness, data is gathered in a variety of ways from sensors (both active and passive), C^4I systems, and situation reports (SITREPs) from senior, subordinate, or lateral commands. Information must be interpreted and correctly applied to be of use and is valuable only insofar as it contributes to knowledge and understanding. Commanders understand things

best in terms of ideas or images; a clear image of their commander's intent and of the local situation can allow subordinates to seize the initiative.

- Positioned Properly. The JTFs' needs for specific types of NBC information are often predictable (i.e., the "when" and "where" of NBC attack). Positioning the required information at its anticipated points of need speeds the flow and reduces demands on communications systems (for example, using public folders to post required NBC-related information).

- Mobile. The reliable and secure flow of information must be commensarurate with the JTF's mobility and tempo of operations. Information flow must immediately adjust to support the vertical and lateral flow of information between adjacent forces (for example, collaborative [integrated] planning system).

- Accessible. All levels of command must be able to pull the information needed to support concurrent or parallel planning and mission execution. If possible, channel information to the required user via automated means and reducing the need for manual exchange (for example, graphic depiction of forces in a CTP).

- Fused. We receive information from many sources, in many mediums, and in different formats. Fusion is the logical blending of information from multiple sources into an accurate, concise, and complete summary. The goal of IM is reducing information to the minimum essential and in easily understood and acted-on format (for example, NBC threat assessment disseminated in graphic form on an automated system).

Figure 2-3. Effective IM Characteristics

2-7. The ultimate goal of the C4I IM systems is to produce a picture of the battle space that is accurate and meets the needs of the commander. The goal is achieved by fusing; i.e., reducing information to the minimum essentials and putting it in a form that people can act on.

2-8. Leaders depend on information to plan and execute missions, and it is important to focus on the specific information requirements that are needed by the staff. For example, the JTF has commander's critical information requirements (CCIR) to focus the staff on the information that the commander requires and feels is critical. This enhances the staff's ability to integrate (filter) information and remain focused on the information of highest value. As part of the process, the NBC staff element provides input to help ensure that processes are in place to filter and fuse raw data before submission of information to answer CCIR.

2-9. JTF headquarters also use requirements for intelligence (RFI) to provide a time-sensitive adhoc requirement for intelligence information or products. For example, RFI could be requested to support an ongoing operation not related to standing requirements or scheduled intelligence production. The intelligence section processes intelligence-related requests and the operations staff processes all other requests.

2-10. During operations, massive amounts of data are furnished to intelligence and operations centers and the data must be filtered, sorted, and turned into

information. The information must be fused, analyzed, and converted into knowledge. The information is then submitted up the chain of command so the staff can make appropriate recommendations concerning JTF operations. It is essential that the assessment process be integrated, thorough, accurate, complete, and conducted by individuals qualified and experienced enough to achieve that end state of helping to ensure informed decisions.

SECTION III – NBC DEFENSE PRINCIPLES—CONTAMINATION AVOIDANCE

Avoidance means taking actions to avoid or minimize the impact of an NBC attack and to reduce the effects of the NBC hazards. There are active and passive contamination avoidance measures. Passive measures include activities such as training, camouflage and concealment, and hardening postitions. Active measures include activities such as warning and reporting of NBC/TIM events; locating, identifying, tracking, and predicting NBC hazards; and limiting exposure to NBC hazards. If the mission permits, avoiding NBC hazards completely is the best COA. This is not always possible. The mission may force one to occupy or cross a contaminated area. This section outlines procedures to use when working or training to work in a contaminated environment. Using these passive and active measures, units can minimize performance degradation.

The contamination avoidance effort contributes to the commander's NBC situational awareness. The integrated detection system that consists of NBC surveillance, detection, identification, monitoring, and reconnaissance provides input to help units reduce vulnerabilities. Information from these arrayed NBC detection systems are interlinked through the C^2 system; and the NBC detection array is integrated (through the unit's reconnaissance and surveillance (R&S) plan) with other information from the unit's intelligence and theater missile defense (TMD) warning systems. Identifying the NBC hazard is a key enabler to avoid contamination and an integrated detection network also supports filtering out false alarms and notifying appropriate units to reduce protection levels, if required.

CONTAMINATION AVOIDANCE OVERVIEW

3-1. Avoidance alone is probably an insufficient response to a representative large-area NBC attack, regardless of the type of unit. On one hand, forces operating from fixed locations (e.g., USAF Air Expeditionary Force) are not capable of relocating quickly enough to avoid contamination, regardless of the type of attack. On the other hand, even highly mobile units (e.g., USMC maneuver units) may be unable to move far enough or quickly enough to avoid contamination when attacks cover such large areas as those possible with typical biological aerosol attacks. Accordingly, for fixed and mobile units alike, avoidance of an NBC attack most likely means detecting or learning of the attack in time to take protective and medical actions to prevent or minimize the effects.

3-2. In general, contamination avoidance includes actions to prevent contamination from getting on mission-essential resources and personnel,

whether directly from agent deposition or by transfer from contaminated surfaces. Contamination avoidance actions include the use of protective covers or coatings and removal of these covers or coatings upon entry into uncontaminated areas. Similarly, contamination control area (CCA) processing is another form of contamination avoidance. Additionally, restriction of movement constitutes a form of contamination avoidance.

3-3. CCAs are essential to sustained operations in an NBC environment. They provide controlled entry areas, force personnel to practice effective contamination avoidance procedures, and limit the spread of contamination into toxic-free areas (TFAs). TFAs provide personnel the ability to work or obtain rest and relief without wearing IPE.

3-4. Contamination avoidance has a direct and significant impact on limiting the spread of contamination by isolating key resources from the need for decontamination. Early detection of missiles or aircraft attacks triggers the use of contamination avoidance procedures and protects personnel through use of IPE. Postattack detection and marking of contaminated areas decreases the inadvertent spread of contamination.

PASSIVE AVOIDANCE MEASURES

3-5. Passive avoidance measures are those actions a unit takes regardless of the status of NBC warfare. Military tactics dictate many practices that will reduce the impact of enemy NBC or conventional attacks. Good training, improved positions, and dispersed forces are particularly effective in reducing the impact of an NBC attack and reducing casualties if an attack does occur. Passive defense measures can include the following:

- Provide realistic, integrated training.
- Use camouflage and concealment (i.e., operational/communications security).
- Ready Positions. Take actions to make them more resistant to the blast effects of conventional or nuclear munitions, to the heat and radiation of nuclear weapons, and to the contamination of biological or chemical weapons.
- Ready Personnel. Under the threat of enemy NBC attacks, leaders must ensure protective equipment is prepared and readily available.

ACTIVE AVOIDANCE MEASURES

3-6. Active avoidance measures are those taken specifically to avoid, control, or mitigate NBC hazards. Active avoidance measures provide the JFC/JTF (through detection, surveillance, identification, reconnaissance, and monitoring) the means to maintain and anticipate the NBC situational awareness status for specific areas. This situational awareness helps the commander to understand the current situation, envision the end state, and envision the sequence that moves his forces from the current state to the end state. This does two things for the commander—it minimizes casualties in the NBC environment and preserves combat power.

DETECTION

Contamination Detection and Identification

3-7. Commanders need information about contamination hazards and locations of clean areas. They gain this information through the NBC warning and reporting system (NBCWRS) and their own NBC recon effort. As they collect data, they forward it to higher headquarters to help form the overall CTP. If higher headquarters requires additional information, they direct detailed surveys. There is a range of detecting and identifying devices and kits to assist the commander in detecting and identifying chemical hazards. The devices and kits range from detection paper to the M93 NBC Reconnaissance System (NBCRS). A typical unit organization (i.e., squadron, ship, company) is equipped with automatic chemical alarms, chemical agent monitors (CAMs), chemical agent detector kits, and detector paper. Table 2-1 provides an overview of the capabilities of each device or kit. Dedicated NBC recon units are equipped with more sophisticated detection and identification equipment. Further, there at least five separate CB detection and identification roles or tasks: protection, treatment, verification or confirmation, all clear, and surface contamination. Specific methods, capabilities, and limitations vary according to the detection and identification role or task.

Table 2-1. Chemical Detection And Identification Equipment

	M8 Paper	M9 Paper	M256 CADK	M8A1 ACAA	CAM	FOX	M22 ACADA	M21 RSCAAL
Detects	G, V, H, L, CX	All liquid agents	G, V, H, L, CX, CK, AC	G, VX	GA, GB, VX, HD, HN-3	All known agents	G, H	G, H
Agent Form	Liquid	Liquid	Vapor	Vapor	Vapor	Liquid and Vapor	Vapor	Vapor
Sources of False Readings	Any oil-based product	Any oil-based product	HC smoke from burning debris, extreme conditions, dry STB	High power lines, vehicle exhaust, rocket propellent smoke, screening or signaling smoke	Petroeum products, ammonia, burning grass, other products		Brake fluid, signaling smoke. Malathion, petroleum products (JP8)	Presence of sun in field of view, insectide, Halon, Alcohol
NOTE: Use of insectides around chemical agent detectors, alarms, monitors, and papers is not recommended.								

Detection for Protection

3-8. Standoff detection provides warning in sufficient time to implement protective measures before exposure to agent contamination occurs. For attacks upwind, detection must occur at sufficient upwind distances to provide a reasonable amount of time for detection, processing and information transmission. Detection of the leading edge of the cloud is preferable, since it can give more warning time. However, such detection requires greater detector sensitivity because the concentration of agent at the leading edge of the cloud is less than in the middle of the cloud. Warning of an upwind attack may come from a unit's/base's own upwind detectors or from other assets monitoring the

area upwind, whether purposely or coincidentally. Lacking the necessary point or standoff detectors, commanders must decide when, based on intelligence indications, the possibility of attack warrants an increased protective posture. Also, reports of an attack from upwind units can provide warning of an attack, assuming the units have the necessary detectors, have observed enemy activities indicative of an attack, or have identified an agent through detection by sampling and analysis. For attacks directly on an airbase or other units (i.e. submunitions released from a TBM), rapid detection of CB agents for warning will be difficult, if not impossible. Donning of IPE in response to a general TBM attack warning, based on the commander's assumption that a CB attack is possible, is a viable COA.

Detection for Treatment

3-9. Detection for treatment focuses on identifying the type of agent dispersed in an attack so that the best possible treatment can be rendered as early as possible. Since some aspects of treatment are agent-specific, agent discrimination is extremely important. Agent sampling and analysis continue to be the primary means of accomplishing this detection role. Detection and presumptive identification for treatment could also come from biological agent identification systems such as Portal Shield, the USN's Interim Biological Detection System, or the USA's Biological Integrated Detection System (BIDS). Sampling is a local action, while analysis can occur locally or at designated medical laboratories, depending on capabilities. Medical personnel collect and submit clinical samples from patients and perform environmental sampling and detection functions; and epidemiology will involve both local and theater-wide observations and reports.

Detection for Verification

3-10. Detection for verification provides critical information to the NCA to support decisions regarding national strategic direction and integration. The NCA uses such information to determine the need for response and to select options in a timely manner, and the intelligence officer is responsible for the overall process involving evacuation of samples for analysis.

Detection for All Clear

3-11. Detection for all clear (dewarning) means detecting the reduction of contamination to acceptable levels. Comparison with methods and results from earlier detection of agent(s) will be an important aspect of determining all clear.

Detection for Surface Contamination

3-12. Detection for surface contamination means detecting deposited contamination on surfaces to make determinations such as whether decontamination is necessary, or whether bypass routes are needed to help facilitate maneuver unit operations.

NBC RECONNAISSANCE

General

3-13. NBC recon is a multiechelon process that begins at the national level and ranges down to alert watchfulness of each individual. Operationally, NBC R&S

focuses on providing key information to support the commander's situational awareness. Tactically, NBC recon is conducted as a routine part of conventional combat operations. For land forces, recon elements check for contamination in addition to looking for enemy activity. Units check relatively small areas and routes of immediate interest to unit commanders. When commanders need additional information unavailable through routine monitoring, they direct surveys of the area of interest (AOI). Further, dedicated NBC recon elements organic to major subordinate command (MSC) such as USA corps and divisions are designed to conduct NBC recon missions. These elements provide early warning of contamination, determine the extent of contamination, and find clear routes of advance. They can determine if contamination remains in an area. NBC recon performs five critical tasks: detection, identification, marking, reporting, and sampling. There are four NBC general NBC recon techniques: search, survey, surveillance, and sampling used during zone, area, and route recon missions.

- Search techniques—used to locate contaminated areas during recon operations.
- Survey techniques—used once the contaminated area is located. The purpose of surveys is to define the extent of the contaminated area.
- Surveillance techniques—the systematic observation of a specific area for indications of an NBC attack.
- Sampling techniques—the collection of material and/or environmental items to support intelligence collection and operational requirements.

Reconnaissance Missions

3-14. Reconnaissance missions help determine that an NBC attack has occurred; and identify the agent that was used.

- Route reconnaissance.
- Area reconnaissance.
- Zone reconnaissance.
- Point reconnaissance.
- Bypass reconnaissance.

Contamination Marking

3-15. Contamination is marked to warn friendly personnel. Units or NBC reconnaissance teams mark all likely entry points into the area and report contamination to higher headquarters. The only exception is where marking would help the enemy. In this event, the hazard is reported to higher headquarters as an unmarked contaminated area. When a unit enters a previously marked contaminated area, personnel check the extent of contamination and adjust plans as necessary. As the hazard area changes, the unit relocates the signs. When the hazard is gone, the unit removes the signs. The unit reports all changes to higher headquarters.

Alarms and Signals

3-16. Alarms and signals convey warning of NBC contamination. Units use easily recognizable and reliable alarm methods to respond quickly and correctly to NBC hazards. Standard alarms, the NBCWRS, and contamination markers help give orderly warning that may also require a change of mission-oriented protective posture (MOPP) level. Alarms and signals may include the following:

- Vocal alarms.
- Automatic alarms.
- Visual signals.
- Fallout warnings.
- All clear signals.

WARNING AND REPORTING SYSTEM

3-17. The NBCWRS provides a means to rapidly send reports on NBC attacks. The reports inform friendly units of clean areas and possible contamination. For the NBCWRS to be effective, units must send information on first use by the fastest communications means available. First use reports require FLASH precedence. Units send subsequent information by any reliable communications means. (see FM 3-3, *Chemical/Biological Contamination Avoidance,* for detailed information on TTP for the NBCWRS). Additionally, when units submit initial observer or contamination-related reports, follow-up information provides additional information; however, units must also follow up with closeout reports of an initial observer or contamination report that turns out to be a "false positive."

3-18. When timely and accurate warning occurs, and enough information is available, units can make predictions using automated tools, if available. Necessary information includes type of agent, release point and time, delivery method, terrain, air stability, and meteorological data. Prediction methods can range from simple manual methods to automated methods.

MITIGATING CONTAMINATION

3-19. To maintain freedom of action, friendly forces may use information from the NBCWRS to bypass contamination or practice other mitigation techniques. Mitigation techniques include leaving nonessential forces behind, encapsulating personnel and critical items, and covering equipment. If friendly forces are already contaminated, they can control exposure by relocating to an uncontaminated area and decontaminating as appropriate. Mitigating measures can include the following:

- Bypassing contamination or isolating areas.
- Encapsulating.
- Covering.
- Relocating.

SECTION IV – NBC DEFENSE PRINCIPLES—PROTECTION

A unit may become contaminated because of direct NBC attack or because the mission causes them to enter a contaminated area. In either case, NBC protection is a command responsibility, and the commander directs actions to ensure continued mission accomplishment. Avoidance and protection are closely related. Techniques that work for avoidance also provide protection. However, there are broad groups of activity that comprise protective measures. They are individual protection, assuming MOPP, reacting to attack, and using CP. FM 3-4, *NBC Protection*, provides detailed guidance on conducting NBC protective procedures. Further, the JTF commander is primarily concerned with the protection of subordinates; however, when directed by the geographic combatant commander, the JTF may be responsible for providing NBC protection to mission essential civilians or noncombatants (see Chapter 4).

INDIVIDUAL PROTECTION

4-1. The JFC will likely provide force protection guidance in orders/directives. The establishment of protection guidance provides components/services with the critical information that they need to ensure that military and mission essential civilian personnel are properly equipped. This guidance on the appropriate IPE helps to ensure protection of the wearer from direct exposure to NBC agents. IPE consists of a mask, overgarment, gloves, and overboots. The mask keeps agent from entering the body through the nose, mouth, or eyes; and the remainder of the ensemble prevents skin contact, absorption through the skin, and entry through cuts or abrasions of the skin. Masks provide a critical and unique form of protection not available through normal combat clothing, whereas protective suits generally duplicate or enhance the protection offered by normal combat clothing.

4-2. Protection offered by the mask is critical, since inhalation, ingestion, or entry through the eyes are the easiest ways for CB agents to enter the body. Assuming a proper fit, the mask itself provides a physical barrier to agent penetration, while the mask's filter canister removes contamination from air being inhaled.

4-3. When the NBC challenge levels are representative of common attack scenarios which approximate the challenges for which the mask was designed, the respirator provides adequate protection, if properly fitted. When worn and functioning properly, the mask's filters, airtight body, and tight face seal adequately protect against agent penetration in these cases. For skin protection, the overgarment, hood, gloves, and overboots provide a physical barrier to agent penetration, much like the mask.

MISSION-ORIENTED PROTECTIVE POSTURE

ASSUMING MOPP

4-4. MOPP balances protection requirements and performance degradation with mission requirements. A commander's decision on changing MOPP guidance can trigger follow-on actions that can cause implications such as increased heat and mental stress and reduced effeciency (see Table 22 for notional MOPP

levels for land forces). Overall, the JFC has responsibility for providing guidance for levels of protection. The higher the MOPP level, the more protection it provides, but the more it degrades performance. Key leaders such as the JTF commander must weigh the needs of NBC protection against unit efficiency. The leader's MOPP decisions are based on factors such as the threat, temperature, work rate, and mission.

MOOTW NEEDS

4-5. Mission requirements during MOOTW (for support of consequence management) may also require use of other standard protection levels such as the US Environmental Protection Agency Levels A-D (see FM 3-21, *Multiservice Tactics, Techniques, and Procedures for Nuclear, Biological, and Chemical Aspects of Consequence Management.*

Table 2-2. Notional MOPP Levels for Land Forces

NOTIONAL MOPP LEVELS FOR LAND FORCES					
Item	**Level 0**	**Level 1**	**Level 2**	**Level 3**	**Level 4**
Overgarment	Readily Available	Worn	Worn	Worn	Worn
Overboots	Readily Available	Carried	Worn	Worn	Worn
Mask & Hood	Carried	Carried	Carried	Worn	Worn
Gloves	Readily Available	Carried	Carried	Carried	Carried
These notional MOPP levels apply to personnel on land. Personnel operating in the air and at sea adopt MOPP levels tailored to their environments as determined by their component or subordinate commanders.					

ADJUSTING MOPP

4-6. Commanders must balance the probable number of heat casualties in MOPP against the possible number of chemical casualties among unprotected personnel. Heat casualties are likely when personnel in MOPP gear are performing hard, physical work under stress of combat. Leaders establish an initial MOPP level before the mission and adjust it as the situation changes or new intelligence is received. Leaders must also consider the degradation, flexibility required, and the protection offered by overgarments. See FM 3-4 for further information on IPE, and/or technical bulletins/manuals on IPE.

MOPP ANALYSIS

4-7. Leaders, generally at shipboard, air operating base, and brigade/battalion level, establish MOPP levels based on an analysis of their unit's particular situation. The analysis finds the balance between reducing the risk of casualties and accomplishing the mission. Commanders must recognize the significant

increase in time required for mission execution in MOPP3 or MOPP4 and anticipate the effects of that degradation on subsequent missions. Leaders must also understand the increased water requirements. The use of MOPP involves risk; the better commanders are at analyzing their units' needs for protection, the lower their units' risk. FM 34 contains a detailed discussion on MOPP analysis and leaders must carefully analyze their operational situation to determine what level should be used. MOPP analysis enables leaders to select the appropriate MOPP level. During MOPP analysis, the commander considers mission, work rate and its duration, probable warning time, terrain, weather, time of day, unit training, additional protection available, and alarm placement.

INITIATING USE OF PROTECTIVE ACTION

4-8. During activities such as force projection operations at APOEs/APODs, commanders ensure their units are aware and capable of taking immediate protective action in the event of an NBC attack. For example, USA or USMC elements are aware of and comply with USN NBC defense measures during operations aboard ship and JTF units from various services/components comply with applicable air operating base survivability procedures. Commanders establish and maintain situational awareness of both friendly and enemy situations and continually assess policy and standard operating procedure (SOP) actions on guidelines such as automatic masking and MOPP levels. They use tools such as MOPP analysis to conduct this assessment. Before initial chemical or biological weapons use, personnel automatically mask when there are high-probability indicators of a chemical attack. High-probability indicators may include activation of chemical alarms, color change of detector paper, aircraft spray, or chemical agent exposure symptoms. The leader's decision on whether personnel should automatically mask is critical in NBC defense preparation. If intelligence sources have identified possible enemy use of biological agents, including toxins, the JTF commander may institute automatic masking. Personnel will also automatically mask for conditions that may signal biological attack, such as smoke, spray, mist, or presence of dead animals or insect vectors. Since some toxins will attack the skin, protective clothing should be worn.

REACTING TO ATTACK

4-9. Personnel take immediate action to reduce the impact of an NBC attack. Following an attack, they take poststrike actions to restore fighting power and prepare to continue the mission. Specific actions vary according to the type of attack.

NUCLEAR ATTACK

4-10. An enemy nuclear attack would normally come without warning. The first indication is a flash of intense light and heat. Induced radiation arrives with the light. Blast and hurricane-like winds follow within seconds. Initial actions must, therefore, be automatic and instinctive. Poststrike actions include damage assessment and restoration of combat power. Leaders maintain control and take contingency actions quickly.

BIOLOGICAL ATTACK

4-11. Personnel should treat a suspected biological attack just as a chemical attack. The protective mask provides protection against all known biological and military chemical agents.

CHEMICAL ATTACK

4-12. Warning of a chemical attack may come from automatic alarm, vocal or visual signal, color change of detector paper, or symptoms observed in oneself or another. The first reaction should always be to mask and then give the alarm. After the attack, leaders adjust MOPP levels as appropriate for the type of hazard and mission. Continued reassessments of available threat information and mission requirements are needed to ensure that MOPP levels are not set too high.

COLLECTIVE PROTECTION

GENERAL

4-13. CP complements the individual protection provided by MOPP gear. CP provides a toxic-free working environment for selected personnel. This environment may allow personnel to function more effectively while continuing to wear overgarments (as with the ventilated facepiece system). Alternatively, it may allow the personnel to temporarily remove overgarments (as with an overpressure system). In either event, the CP system is effective only as long as entry and exit procedures remain valid. When CP shelters are used to provide relief from wearing MOPP, commanders establish a system for rotation of personnel. They plan for supplies, maintenance, and transportation to support the system. They establish operating procedures for the shelter that assure security, reliability, and utility.

COLLECTIVELY PROTECTED SHELTERS

4-14. Collectively protected shelters are structures that protect from the effects of NBC contamination. Walls, doors, and windows offer limited physical barriers to the penetration of contamination. Although filter systems in heating, ventilation, and cooling systems can remove certain levels of particulates, they should be shut down to prevent unnecessary spread of contamination. Unless employed in combination with other types of weapons, CB weapons normally involve less destructive force; thus, agent can be disseminated without destroying it in the dispersal process.

CP BENEFIT

4-15. CP systems protect those inside a building, room, shelter, or tent against contamination through the combination of nonpenetrable structural materials, air filtration equipment, air locks, and overpressurization. CP systems reduce contamination levels when personnel enter or exit the structure. They enable personnel to work or gain rest and relief without the encumbrance of IPE. If CP systems are not available and NBC contamination is present and persists beyond a few hours, it may become necessary to locate and designate contamination-free areas for rest and relief.

TYPES

4-16. Currently, there are three primary types of CP systems. The first type is CP built into critical work areas such as squadron operations centers, wing command posts, communications centers, hospitals, and avionics maintenance facilities. A number of these systems are currently in some CB threat areas. The second type of CP, survivable collective protection systems, are underground rest and relief shelters positioned near operational areas. The third type, transportable CP, is deployable and has three variations that can protect work areas or rest and relief areas. One variation fits inside of rooms within buildings, another protects deployable shelters, and a third stands alone.

SEALING STRUCTURES

4-17. Sealed and closed structures offer some protection. In the absence of dedicated CP systems, the inherent features of some buildings offer protection not otherwise available. Walls, doors, and windows offer physical barriers to the penetration of contamination, while filters in heating, ventilation, and cooling systems can remove certain levels of particulate contamination. Wearing a mask inside such structures increases the protection for the wearer.

SECTION V – NBC DEFENSE PRINCIPLES—DECONTAMINATION

The extent and timing of decon depend on the tactical situation, mission, degree and type of contamination, and resources available. FM 3-5, *NBC Decontamination*, provides detailed guidance on conducting decontamination operations. The primary purposes of decontamination are to stop erosion of combat power and reduce casualties that may result from inadvertent exposure or failure of protection. Combat power reduces as soon as personnel don MOPP. The mask restricts the field of vision and reduces observation and target acquisition ability. Communication is more difficult. Mobility is reduced because personnel reduce their physical work rate to avoid heat stress. The longer a unit remains contaminated, the greater the chance of NBC casualties. Other injuries may also increase because combat efficiency is reduced. Timely correct decon avoids problems, such as protective gear failure and heat stress. Thus, decontamination reduces the number of casualties that may result from an NBC attack. Decontamination is costly in terms of manpower, time, space, and materiel. These same resources are required to fight the battle, so commanders must apply them wisely and sparingly. The following principles support this action:

- Speed—decontaminate as soon as possible to restore full combat potential as soon as possible.
- Need—decontaminate only what is necessary. Consider mission, time, extent of contamination, MOPP status, and decontamination assets available.
- Limit—decontaminate as close to site of contamination as possible to limit its spread. Do not move contaminated equipment or personnel away from the operational area if it is possible to bring decontamination assets (organic or supporting units) forward safely. This will keep the equipment

on location, speed decontamination, and limit the spread of contamination to other areas.

- Priority—decontaminate the most important items first and the least important items last.

LEVELS OF DECONTAMINATION

5-1. The three levels of decontamination (immediate, operational, and thorough) complement each other and serve to minimize contamination, save lives, and limit the spread of contamination. Ultimately, the goal is to reduce or eliminate the need for IPE.

IMMEDIATE DECONTAMINATION

5-2. Immediate decontamination is exactly what the term implies—the immediate actions taken by an individual to survive. Individuals conduct immediate decon using supplies and equipment they carry. Immediate decontamination consists of the following:

- Skin decontamination.
- Personal equipment wipedown.
- Operator spray/wipedown.

OPERATIONAL DECONTAMINATION

5-3. Teams or squads conduct operational decontamination using organic decontamination equipment (i.e., availability of lightweight decon system at battalion level). If this equipment is not available, units will request vehicle washdown through command channels. This mission can be tasked to the supporting NBC unit. These procedures limit the spread of contamination and allow temporary relief from MOPP4. Operational decontamination makes thorough decontamination easier by speeding up the weathering process for chemical and biological contamination. Operational decontamination is less resource-intensive than thorough decontamination. FM 3-5 describes in detail the procedures for operational decon. Operational decontamination includes the following:

- MOPP gear exchange.
- Vehicle washdown.

THOROUGH DECONTAMINATION

5-4. This is the most resource-intensive level of decontamination. It requires external support by small units (i.e., platoon or company-size elements) assigned the mission of NBC decontamination. Thorough decontamination goals are to reduce contamination to neglible risks duing combat operations; however, during postconflict operations, retrograde decontamination becomes a key concern (see paragraph 5-10). These elements require augmentation from supported units to accomplish missions. The decontamination unit is in charge of the decontamination site and operation. Forces coordinate decontamination sites with the HN through civil-military liaison teams. The commander of the decontamination operation takes positive action to prevent runoff and

contamination of civilian water sources. FM 3-5 describes in detail the procedures for thorough decontamination. The three techniques used in thorough decontamination are—

- Detailed troop decontamination.
- Detailed equipment decontamination (DED).
- Detailed aircraft decontamination.

EFFECTS OF DECONTAMINATION

5-5. Decontamination has positive and negative effects on unit effectiveness. The overriding positive effect and ultimate goals of decontamination are the restoration of the combat power lost when assuming MOPP. A negative, offsetting effect is a consumption of resources (time and supplies). Commanders must decide where the optimum trade-off occurs between restored power and resource depletion.

5-6. Immediate decontamination allows personnel to survive and continue to fight on the battlefield. Operational decontamination allows the force to fight longer by reducing contamination. Personnel may temporarily unmask under controlled conditions to eat, drink, and rest. When time permits, thorough decontamination restores almost all combat power of the contaminated force. However, the decontamination operations reduce combat power during the decontamination period.

5-7. All decontamination uses valuable resources, including time. Staff estimates must include time and resupply requirements. NBC personnel work closely with combat operators and logisticians to determine resources needed and availability. In some cases, resources will not be readily available for decontamination. In this event, the commander may choose weathering to reduce contamination. There may be substantial time before personnel can reduce MOPP levels if weathering is allowed.

CASUALTY DECONTAMINATION

5-8. Casualty decontamination is absolutely essential. Personnel injured from NBC munitions will be triaged separately and decontaminated before medical care is rendered. Additionally, patient decontamination is done as far forward as possible to limit the spread of contamination. Casualty decontamination presents special problems for units and HSS personnel. Under NBC conditions, contaminated wounded personnel create increased hazards to rescuers and HSS personnel. On the NBC battlefield, two classifications of casualties will be encountered: contaminated and uncontaminated. Those who are contaminated may be suffering the effects of an NBC agent, a conventional wound, or both. It is important to follow proper decontamination procedures to limit the spread of contamination. Casualty decontamination begins at small unit level. When the battle and casualties' conditions permit, they may go through a MOPP equipment exchange. When battle conditions prevent decontamination procedures forward, casualties may require evacuation to an aid station before decontamination. Patients who arrive at the aid station contaminated must be decontaminated before admission into the clean treatment area. A patient decontamination team from the supported unit performs patient

decontamination. The team operates under the supervision of medical personnel to ensure no further patient injury during the decontamination process. The next higher-echelon medical treatment facility (MTF) may also receive contaminated patients and is also supported by a patient decontamination team from the supported unit.

TERRAIN DECONTAMINATION

5-9. Despite the tremendous logistical burden, terrain decontamination may be necessary at fixed sites such as rail heads, depots, and so forth. Terrain decontamination may be very limited, such as to paths, specific buildings, piers, and docks. Terrain decontamination will occur only where operationally required. If terrain decontamination is required, expedient methods such as covering with earth or scraping may be used.

ENVIRONMENTAL

5-10. Accurate record keeping will be essential for support of decontamination. During postconflict, it may become important to know where actions such as DED were conducted. Environmental considerations are key planning considerations across the raange of military operations. Planners may consider factors such as—

- Availability of potable/nonpotable water sources.
- Effect of decontaminants on water supply.
- Residual hazard assessment.

FIXED SITE AND RETROGRADE DECONTAMINATION

5-11. Fixed site procedures support decontamination of critical areas such as maintenance depots, APOEs/SPOEs, or C² facilities (see FM 3-4-1, *Fixed Site Protection*, and FM 3-5). Retrograde decontamination may require additional resources such as low-level monitoring equipment. Detailed planning also provides for consideration of multiple options such as decontamination, weathering, or destruction.

Chapter 3

NBC Defense C^2 Considerations, Roles, and Responsibilities

C^2 considerations for NBC defense operations will vary depending upon the type of operation, the nature of the threat, and the set of capabilities needed to accomplish the mission. The operations conducted may be single-service, joint, coalition, or multinational and may involve civil authorities from the US and other nations. Further, operations (whether in a conflict or MOOTW setting) can take place as part of an ongoing combat operation or as part of a JTF supporting consequence management.

SECTION I – NBC DEFENSE C^2 CONSIDERATIONS

Unity of effort is a key C^2 consideration for effective use of forces in an NBC environment (see Figure 3-1). In particular, the unique aspects of communications, intelligence, operations, sustainment, and decision making in NBC environments present challenges to commanders and staffs.

1-1. Developing sound NBC defense COAs will require timely exploitation of all information from sources such as NBC detection, surveillance, and reconnaissance systems. NBC situational awareness from sources such as sensors, detection systems, and warning and reporting networks must be fully integrated into the overall C^2 system to make the best use of available time.

1-2. Effective vulnerability assessment uses input from the IPB process. The assessments provide critical input to support the military decision-making process.

1-3. The specific COAs recommended consider prioritized use of limited NBC defense assets. Decision makers consider key elements of command guidance such as commander's intent, CCIR, and the defended assets list (DAL) in assessing where to allocate limited numbers of NBC reconnaissance, surveillance, and decontamination assets. Additionally, civil considerations (e.g., minimizing collateral damage) can influence modification of recommended COAs. For example, theater strategic countermeasures could include counterforce operations against an adversary's WMD capability. An operational-level countermeasure could include reallocation of NBC reconnaissance assets to support an intermediate staging base that has been placed on the DAL. A tactical-level countermeasure could involve rapid dispersal of units after arrival at an APOD or SPOD.

1-4. Integrating the command's warning and reporting system enables tactical- and strategic-level warning of affected units to take action such as assuming an increased protection level. Further, the same system that warns personnel should also provide for notifying personnel (dewarning) that they can reduce their protection levels.

SECTION II – COMMAND RELATIONSHIPS—NBC UNITS

Command relationships (see Figure 3-1) indicate the degree of authority a JFC can exercise over NBC units.

COMMAND RELATIONSHIPS

COMBATANT COMMAND

2.1 COCOM over assigned forces, including NBC assets, is vested only in the commanders of COCOM and cannot be delegated or transferred.

OPERATIONAL CONTROL (OPCON)

2-2. Subordinate JFCs exercise OPCON over assigned or attached NBC units through the commanders of subordinate organizations; in peacetime, this authority is normally exercised through service component commanders. JFCs may establish functional components to provide centralized direction and control of certain functions and types of operations. The JFC will designate the military capability that will be made available for tasking by the functional component commander, such as the joint force air component commander, the joint force land component commander, the joint force maritime component commander, and the joint force special operations component commander.

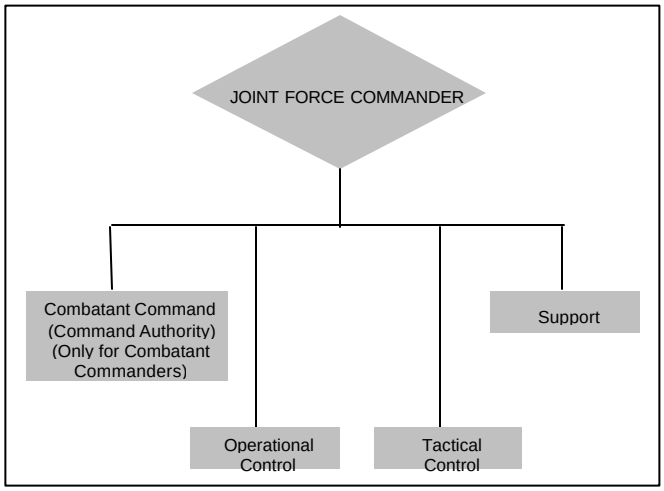


Figure 3-1. Command Relationships

TACTICAL CONTROL (TACON)

2-3. For short-term arrangements, NBC units may also be attached to a subordinate command to which TACON authority has been delegated for local control and direction.

SUPPORT

2-4. Support relationships may be used when support to the force as a whole or to a particular subunit of the force is needed. The higher headquarters retains central authority and also remains responsible for logistics support; however, a support relationship may still require that the supported unit remain responsible for logistics support.

C² CONSIDERATIONS—DISPOSITION/ARCHITECTURE

GENERAL

2-5. The JFC should be fully aware of all available NBC assets and capabilities and integrate their capabilities into the operational plan (OPLAN) (see Figure 3-2). For example, the air operating base commander prepares the basic support plan and integrates available NBC defense capabilities to support force protection requirements. The commander at the air operating base shown in Figure 3-2 could recommend to the JTF that additional decontamination assets be made available. Based on that request, the JTF could request an adjustment to the time-phased force deployment list (TPFDL) and that the air component be furnished with NBC units that have a deliberate decontamination capability. Additionally, the maritime component commander at the port may determine that there is a shortfall in the available NBC reconnaissance capability. In turn, a recommendation could be forwarded to the JTF for additional NBC recon assets. The JTF response shown in Figure 3-2 could be to attach an NBC recon company to the maritime component command (MCC).

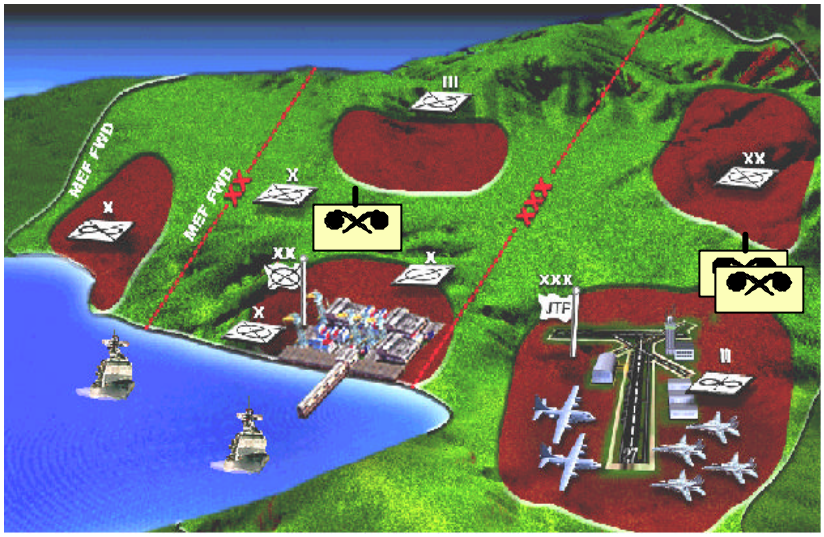


Figure 3-2. NBC Unit Employment

FORCE COMPOSITION

2-6. The JFC should identify available NBC capabilities. This analysis begins by defining command relationships to determine what assets are assigned to the JFC. The JFC's staff should then assess the available operational NBC defense capabilities and determine whether any shortfalls need to be remedied.

FORCE DISPOSITION

2-7. The JFC should determine the best way to employ NBC assets without exposing the forces to unacceptable risks. For example, if the joint force is primarily conducting land operations, the JFC may wish to position NBCRS at an optimum location to ensure maximum responsiveness in support of ground operations.

PRIORITIZATION

2-8. The JFC should establish priority intelligence requirements (PIRs) before the onset of hostilities. These priorities should generally conform to the military objectives. NBC monitoring, survey, detection, surveillance, and identification capabilities are focused on supporting the established PIRs. Experience has shown that combat operations seldom go as planned, with the fog and friction of war causing operations to evolve in unanticipated directions. Therefore, prioritization of NBC-related PIRs is critical.

OTHER JOINT FORCE C^2 NBC CONSIDERATIONS

2-9. The JFC may appoint a joint rear area coordinator (JRAC) to be responsible for coordinating the overall security of the joint rear area (JRA). The JRAC would coordinate force protection requirements (to include passive defense) across the joint components.

SECTION III – COMMAND RESPONSIBILITIES FOR OPERATIONS IN NBC ENVIRONMENTS

In the US and abroad, all elements and commands of the US armed forces have basic responsibilities at the outset of operations (see Table 3-1). A key task is the establishment of protection against NBC attacks in the operational area and in other areas providing forces and sustaining capabilities. The goals established to carry out military responsibilities include prevention of adverarial use of NBC weapons either in the US or abroad, rapid and uninterrupted force preparation and deployment, and comprehensive force protection. These goals should be reflected in joint operation planning, development of branches in campaign plans, redundant assignments of mission-essential tasks to forces, and visible exercises that assure peacetime preparedness and may thereby deter potential adversaries.

Table 3-1. Military Goals at the Outset of Operations

MILITARY GOALS AT THE OUTSET OF OPERATIONS

These goals should be reflected in joint operation planning, development of branches in campaign plans, redundant assignments of mission-essential tasks to forces, and visible exercises that assure peacetime preparedness and may thereby deter potential adversaries.
• **Prevention of adversarial use of NBC weapons either in the US or abroad.**
• **Rapid and uninterrupted force preparation and deployment.**
• **Comprehensive force protection.**

BASIC GOALS

3-1. Commanders' mission analyses identify specific mission-essential tasks for individuals and organizations that facilitate operations in NBC environments.

3-2. Commanders of forces and facilities in the US and abroad are responsible for assessments of vulnerabilities that may compromise peacetime preparedness, given the NBC threat and the potential utility to state and nonstate actors of NBC attacks against US civilian and military targets.

3-3. Commanders are responsible for coordination with civilian authorities and agencies to prevent and, if necessary, mitigate and manage the consequences of deliberate or accidental NBC employment or similar toxic material events in the US.

3-4. US ambassadors and their country teams have primary responsibility for coordination with their host country government and commanders in theater operational areas must coordinate their actions with the country team to maintain peacetime preparedness.

3-5. Commanders' operation plans must include options for generating adequate and timely force capabilities (including force protection) in the event of early adversary NBC employment in the supported COCOM AOR.

3-6. Commanders establish PIRs and take precrisis actions to prevent or minimize the impact of an NBC attack.

3-7. Commanders (i.e., geographic combatant commander), if required, communicate and reinforce US deterrence policies established by the NCA. The commander is prepared to recommend and implement flexible deterrent options (FDOs) in NBC environments consistent with the JSCP and other applicable plans. FDOs may be diplomatic, economic, informational, or military in nature. They may include exercises and demonstrations of NBC defense capabilities in order to convey US preparedness to counter adversary threats and mitigate the consequences of NBC attacks without significant degradation of operations.

3-8. The commander considers the adequacy of equipment and training of nonmilitary and non-US logistic personnel to survive and operate in NBC environments.

3-9. Other specific responsibilities with regard to NBC defense include integrating the capabilities of available detection systems, providing guidance for levels of protection and ensuring timely warning of NBC risks, and prioritizing decontamination requirements.

JOINT AND COMBATANT COMMANDER RESPONSIBILITIES

JOINT FORCE COMMANDER

3-10. The JFC must plan for and integrate US and coalition force capabilities to sustain the multinational OPTEMPO in all mediums (air, sea, land, and space), regardless of the nature and targets of an adversary's attack. The JFC ensures that forces and facilities are prepared to operate in NBC environments. The JFC establishes and implements a deliberate process for assessing the vulnerability of manpower and materiel to NBC attack. This process will integrate all offensive and defensive capabilities to reduce the threat of NBC use and sustain operations if attacks occur. The process will also include executing mitigation and restoration plans to reduce the operational impact of NBC contamination and other toxic hazards. The JFC ensures that critical logistics throughput and transporation facilities receive adequate protection; and that plans, training, and equipment are in place for rapid restoration of operations after attack.

COMBATANT COMMANDERS

3-11. Combatant commanders must be able to execute the campaign under NBC conditions through unified action at the theater level. Unified action for subordinate JFCs is equally important for combat, combat support, and combat service support units of all service and multinational partners. Unified action encompasses not only NBC-related actions, but also all other actions that permit continuation of theater operations and focus on attaining the single theater military objective inline with the JFC's intent.

GEOGRAPHIC COMBATANT COMMANDER/SUBORDINATE JFC

3-12. The geographic combatant commander's responsibilities can include protecting US civilians in the joint operations area (JOA) who accompany the force to provide mission-essential services or who are sponsored by the force. The service or other component sponsoring the civilians in the theater normally discharges responsibilities in this area. These responsibilities may include, but are not limited to, the issuance of protective clothing and equipment, training on this equipment, instructions regarding movement into and within high-NBC-threat areas, and procedures to implement in the event of attack. Protective clothing and equipment will be made available to US civilians consistent with supply availability and their risk of exposure. In the event of shortages of masks or overgarments, limitations on movement by unequipped civilians into high-threat areas may be necessary. Sufficient quantities of the necessary clothing and equipment may be obtained as the theater matures. In response to a request from the US country team, the combatant commander or subordinate JFC may assume responsibility for US civilians who are neither mission-essential nor sponsored.

3-13. The geographic combatant commander provides for measures to protect enemy prisoners of war (EPWs) and civilian internees (CIs) from attacks, to include NBC attacks. EPWs and CIs may not have protective clothing that is adequate or compatible with that of US and multinational partners, and therefore could require the issue and training on the use of US equipment. Appropriate medical treatment must be provided to EPWs and CIs in the event of injury, to include injury from NBC exposure. Where the NBC threat to EPWs and CIs is high, this may place additional requirements on US and

multinational forces for training, liaison, decontamination, HSS, and other logistic support.

3-14. Further actions provide specific guidance to ensure that their forces are able to sustain military operations in NBC environments. This includes actions required to ensure successful transition from any existing state of preparedness and engagement to any operation directed by the NCA.

3-15. Planning also helps to ensure proper placement of NBC defense assets in theater in advance of a crisis or conflict, and in the time-phased force and deployment data prepared to support movement to the theater. In particular, the combatant commander should be cognizant of any significant shortfalls in the capability or availability of NBC defense assets.

3-16. The planning process establishes appropriate command, planning, and operational relationships and ensures that coalition and HN weaknesses do not compromise US forces or missions. It may be necessary in this regard to apply US resources to support multinational partners and HNs before, during, and after NBC attacks. The JFC must identify requirements for support from US resources and develop plans and procedures that integrate and obtain maximum value from multinational forces and HN capabilities to support the continuation of operations. The JFC is responsible to establish the necessary support agreements that would make available US assets (e.g., units, equipment, personnel, and supplies) to support NBC defense and mitigate and manage the consequences of adversary NBC use in the theater.

MULTINATIONAL FORCE RESPONSIBILITIES

3-17. Subject to the provisions of mutual support agreements and available means, multinational partners may assume the responsibility for providing support and assistance to US and other multinational forces operating in their areas. This support and assistance may involve the full spectrum of NBC defense activities, offensive actions to reduce or eliminate the NBC threat, and actions to mitigate and manage the consequences of adversary NBC use in the theater.

3-18. The protection of forces and supporting civilians of other countries participating with the US in multinational operations is the responsibility of the multinational force chain of command within the theater of operations. In order to provide maximum protection to all forces, the JFC should, to the greatest extent possible, involve other participating forces in NBC defense and related activities.

HN RESPONSIBILITIES

3-19. Based on applicable agreements and proper coordination, the HN has the responsibility to provide support and assistance to US and other forces operating on its territory. This support and assistance may entail HSS personnel, supplies, facilities, decontamination, and transportation.

3-20. In the event of adversary NBC attack, the HN is responsible for protecting its forces, citizens, and infrastructure. The JFC will respond to requests for NBC defense or mitigation and management of the consequences of adversary

NBC use in coordination with the US country team, consistent with support agreements and available resources.

SECTION IV – NBC DEFENSE SUPPORTING PLANS

Integration of functional responsibilities (personnel, intelligence, operations, fire support, logistics, civil military affairs, engineer, air defense, and security/provost marshall, etc.) at the strategic, operational, and tactical levels is necessary to coordinate NBC actions across these functional disciplines. Commanders integrate personnel and resources from diverse specialities and assemble plans and intelligence to defeat NBC threats in key documents such as base support plans. These types of plans provide for integration of resources to support effective NBC defense operations. Each major functional area (i.e., operations, intelligence, etc.) is interdependent on the others in order to reduce adversary capability and maximize friendly force effectiveness.

OPERATIONAL RISK

4-1. Central to each functional AOR is assessment of operational risk. NBC/TIM threats can come from multiple sources. They can be unexpected and employed through a broad range of tactics from clandestine operations to large-scale attacks. They may be intended to cause psychological distress or diversion, hinder operations, or cause massive casualties and force withdrawal. Identifying and quantifying the risks involved requires a concerted intelligence effort against potential aggressors. Operational risk assessments based upon this information are essential. The risk assessment process is vital to determining the priority trade-offs in assessing what types of mission capability are needed in the early stages of an operation. For example, early deployment of active defense and passive defense equipment could displace assets needed for offensive operations. Operational risk assessments consolidate and clarify issues so leaders are able to make informed decisions. Risk assessments also recognize that not all NBC agents have the same impact on operations as different agents have different degrees of lethality and persistence.

STRATEGIC, OPERATIONAL, TACTICAL RESPONSIBILITIES

4-2. Strategic-level responsibilities will determine national or multinational (alliance or coalition) strategic security objectives and guidance and develop and use national resources to accomplish these objectives. A geographic combatant commander will usually participate in these discussions with the NCA through the Chairman of the Joint Chiefs of Staff and with allies and coalition members. The theater strategy is thus an element that relates to both US national strategy and operational activities within the theater. Strategic-level decisions form the basis for promoting stability and thwarting aggression through credible deterrence and robust warfighting capabilities. At the strategic level, analysis of mission, enemy, terrain and weather, troops and support available, time available, and civilian considerations (METT-TC) focuses on the conditions, circumstances, and potential influences (i.e., NBC/TIM threat) on the theater strategic environment.

4-3. The operational level links the tactical employment of forces to strategic objectives. The operational-level staff's IPB anticipates what may occur within the AO and effective joint and multinational cooperation is required. Operational employment of military forces also examines the arrangement of their efforts in time, space, and purpose (i.e., prioritizing the deployment of resources, ensuring presence of required infrastructure, etc.). Joint operational art, in particular, focuses on the fundamental issues associated with the synchronization of air, land, sea, space, and special operations forces to support NBC defense operations.

4-4. Tactical level responsibilities and execution enable the force to survive, fight, and win under NBC conditions. Commanders reduce the likelihood of NBC attack through avoidance measures. They disperse their forces and ensure operations and communications security. When units cannot avoid contamination or are in danger of an enemy NBC attack, they implement NBC protective measures. To restore combat power, commanders decontaminate as early as possible to reduce contamination levels.

4-5. In summary, functional responsibilities at the strategic , operational, and tactical levels of war vary in the scope and level of detail. At the theater strategic and operational level, situational awareness provides a “near-real time” picture of enemy NBC capabilities. This information allows commanders to adjust their plans based on NBC/TIM hazards. The impact of an NBC environment on OPTEMPO and force generation capabilities will impact strategic- and operational-level actions. At the tactical level of war, “near-real time” portrayal of enemy NBC capabilities helps units avoid enemy NBC attacks and limit contamination. It allows rapid dissemination of information on required protective measures. It provides early warning of NBC attack to units.

FUNCTIONAL AREA RESPONSIBILITY

4-6. To support OPLAN execution, the commander's staff executes their proponent responsibilities to ensure that each required capability in an NBC environment can be successfully accomplished.

PERSONNEL

4-7. The personnel officer and NBC staff assess the probability and impact of NBC-related casualties. They also assess NBC personnel readiness issues. This is especially critical when a majority of our forces are reserve component, arriving in theater at various times, and spread across combat, combat support, and combat service support units. The personnel and medical officer ensure medical support is available and prepared for an NBC attack. They advise the commander on the medical effects of NBC weapons, treatment, and protection available. The medical officer provides recommendations on associated environmental concerns, such as heat stress in MOPP. The NBC staff checks with the personnel officer to determine the impact of NBC casualties on the unit throughout all phases of operations. The personnel officer also monitors the operational exposure guidance (OEG) of units in coordination with the NBC officer and surgeon.

INTELLIGENCE

4-8. The NBC staff works with the intelligence officer on weather and terrain data. They assess whether environmental factors are conducive to enemy use of NBC weapons. The intelligence section's PIRs address the enemy situation and his ability to use NBC weapons. The NBC staff also supports the intelligence section in the development of PIRs. He assists in the IPB process for all phases of operations, determining and/or evaluating enemy capabilities, types of agents, types of obscurants and sensors, protective posture, line-of-sight influences on direct fire, and friendly vulnerabilities to enemy strengths. The intelligence section also provides information on enemy vulnerability to friendly operations (for example, smoke and obscurants).

OPERATIONS

4-9. The NBC staff recommends proper MOPP guidance, troop safety criteria, and OEG. They also recommend priorities for use of limited NBC defense resources to the operations section through all phases of operations. The NBC staff supports the operations staff by recommending task organizations for NBC units and coordinating smoke, decontamination, and NBC recon efforts. Further, the NBC staff advises the commander on the impact of NBC-related attacks on the current and future concepts of operations. They also provide input to the commander on hazard predictions, vulnerability analyses, control of NBC units, mitigating techniques, and recommending priorities for actions such as decontamination, NBC recon support, or chemical defense equipment (CDE) resupply. The NBC staff also recommends to the operations section NBC recon, decontamination, and smoke support assets required for vulnerable rear area targets.

LOGISTICS

4-10. The NBC staff must coordinate with the logistics section concerning MOPP gear, decontaminants, and resupply requirements throughout all phases of operations. The logistics and NBC staff officer must know the rate and extent of the unit's decontamination capability. They also must plan to decontaminate contaminated supplies or equipment. In addition, the NBC staff officer keeps the logistics section abreast of any reported NBC contamination to MSRs and critical supply and maintenance facilities that affect unit sustainability. He also advises the logistics section on ways to limit the need for decontamination of supplies, which includes the use of disposable protective wraps or covers.

CIVIL AFFAIRS (CA) OFFICER

4-11. The NBC staff works with the CA officer on estimating the impact of NBC events on the civilian population in the unit's operational area. Psychological operations (PSYOP) are also considered when estimating the impact of NBC events. The NBC staff coordinates with the civil affairs section for integration of HN assets into decontamination operations, such as field expedient decontamination equipment and supplies (steam cleaners and bleach), fire trucks, and wash racks. They also consider the integration of field expedient NBC protective shelters, such as existing buildings in local population centers.

ENGINEER OFFICER

4-12. The NBC staff works with the engineer staff to identify NBC obstacles and plan for the use of smoke and obscurants at river crossings sites and obstacle breaching. The NBC staff also coordinates engineer support for NBC decontamination survivability operations and facility hardening.

AIR DEFENSE

4-13. The NBC staff and air defense officer coordinate to exchange information on NBC defense and chemical downwind hazards from enemy NBC attack and integration of the TMD warning system into the JFC's passive defense strategy.

FIRE SUPPORT

4-14. As required, the NBC staff and fire support element (FSE) coordinate during the targeting process. Prior to target nomination and selection, coordination addresses the type of enemy NBC agents and their containment within facilities and vehicles, proximity to population centers, and adversary active and passive defenses to include anti-aircraft weapons systems and facility hardening. Another factor is the Law of Armed Conflict and its relation to noncombatants and friendly forces. All of these target considerations will affect the mission planning for the correct force mixture to deliver the right weapon to defeat an adversary's NBC capability with minimum collateral effects. Target planning also requires knowledge of the types of agents, disposition, location, storage, employment area, and demographics to effectively predict collateral effects. Automated planning tools provide target modeling that assists decisions regarding the risks associated with collateral effects.

SECURITY

4-15. The NBC staff and provost marshal coordinate and exchange needed information on NBC defense, especially data on NBC identification, detection, and warning. Timely information exchange on NBC defense is especially important for battlefield circulation control. Traffic control points should be well informed on the location of any contamination.

SURGEON/HSS

4-16. The staff surgeon advises the commander on the medical effects of NBC weapons/TIM and treatment. The surgeon's staff provides recommendations on associated concerns such as heat stress and phychological effects of NBC weapons use. The surgeon's plans help to ensure that required medical support is available and prepared for an NBC attack.

NBC OFFICER

4-17. The NBC officer is responsible at every echelon of command for NBC defense. Specific responsibilities may include the following:

- Recommend COAs to minimize friendly and civilian vulnerability and assess probability and impact of NBC-related casualties.
- Provide technical advice and recommendations on MOPP, troop-safety criteria, OEG, NBC reconnaissance, smoke operations, BW defense measures, and mitigating techniques.

- Help verify, in conjunction with the surgeon, and report enemy first use of NBC agents.
- Assess probability and impact of NBC-related casualties.
- Coordinate among the staff while assessing the impact of enemy NBC-related attacks and hazards on current and future operations.
- Coordinate with the surgeon on health support requirements for NBC operations.
- Conduct NBC IPB vulnerability analysis and recommend PIRs.
- Plan, supervise, and coordinate the conduct of NBC decontamination (except patient decontamination) operations.
- Assess weather and terrain data to determine if environmental factors are conducive to enemy employment of NBC weapons.
- Predict downwind vapor hazard and fallout patterns and their probable effects on operations.
- Plan, coordinate, and manage chemical and radiological survey and monitoring operations.
- Collate, evaluate, and distribute NBC attack and contamination data.
- Prepare and distribute NBC messages.
- Prepare NBC SITREPs.
- Maintain and report radiation exposure and dose status and coordinate with surgeon.
- Participate in targeting meetings (when required).
- Estimate effect of a unit's radiation exposure state on mission assignments.
- Estimate consumption rates of NBCDE and supplies.
- Manage the NBCWRS.
- Coordinate with the logistics section as it relates to CDE and supplies, maintenance of chemical equipment, and transportation of chemical assets.
- Plan, coordinate and manage decontamination operations within assigned AO.
- Coordinate integration of NBC reconnaissance assets into the R&S plan.
- Plan and recommend integration of smoke into tactical operations.
- Based on available capability, conduct smoke target development.

Chapter 4

Planning

The primary purpose of NBC defense planning is to support joint campaign planning, JFC's and component commander's and JTF decision making needs. This is accomplished by identifying, assessing, and estimating the adversary's NBC capabilities, intentions, and COAs that are most likely to be encountered based on the situation; and providing guidance to help ensure that forces and facilities are prepared to operate in NBC environments. NBC defense assessments support several critical facets of joint force planning and decision making, to include mission analysis, COA development, and the analysis and comparison of friendly COAs. Although NBC defense planning support to decision making is both dynamic and continuous, it must also be "front loaded" in the sense that extensive NBC defense vulnerability analysis must be completed early enough to be factored into the JFC's decision making effort. The joint force NBC officer, and staff work together to ensure that all analyses are fully integrated into the joint force's deliberate and crisis action planning. They accomplish this through wargaming friendly versus adversary COAs, and by mutually developing products designed to assist the JFC's decision making process.

SECTION I – STRATEGIC, OPERATIONAL, AND TACTICAL PLANNING

The basic NBC defense planning process remains the same across the range of military operations, regardless of the level of war. Nevertheless, specific NBC defense planning considerations may vary considerably between strategic, operational, and tactical level operations due to differences in mission, available resources, and size of the operational areas and AOIs.

STRATEGIC-LEVEL NBC DEFENSE PLANNING

1-1. Activities at the strategic level establish national and multinational military objectives; sequence initiatives; define limits and assess risks for the use of military and other instruments of national security policy; develop global plans or theater war plans to achieve these objectives; and provide military forces and other capabilities in accordance with strategic plans. The strategic-level battle space will address potential adversaries who might have NBC capabilities such as global adversaries, regional adversaries or nonstate groups. A number of these potential adversaries have, or could rapidly acquire, NBC weapons and other toxic materials. Other factors such as treaties, international law, the capability of adversary propaganda to influence US public support, and world opinion can also impact the command's NBC defense planning. The

strategic-level battle space environment is analyzed in terms of geographic regions, nations, and climate rather than local geography and weather. For deterrence, political and economic characteristics of the battle space assume increased importance at the strategic level. For example, the industrial and technological capabilities of a nation or region can influence the type of NBC weapons it fields. Political and economic considerations that influence deterrence may be the dominant factors influencing adversary COAs. At this level, the analysis of the adversary's strategic capabilities will concentrate on considerations such as national will and morale, ability of the economy to sustain warfare, possible willingness to use NBC weapons, and possible intervention by third-party countries. COA models at the strategic level consider the entire spectrum of resources available to the adversary and identify both military and nonmilitary methods of power projection and influence.

OPERATIONAL-LEVEL NBC DEFENSE PLANNING

1-2. The size and location of the operational-level battle space depends on such varied factors as the location of adversary political and economic support structures, military support units, force generation capabilities, potential third-nation or third-party involvement, logistic and economic infrastructure, political treaties, press coverage, adversary propaganda, and the potential for IO. At the operational level, the analysis of the battle space environment should concentrate on characteristics such as the capability of road, rail, air, and sea transportation networks to support the movement of, and logistic support to, NBC weapons; zones of entry into and through the operational area and AOI; the impact of large geographic features such as mountains, large forests, deserts, and archipelagos on military operations; and seasonal climatic efforts on NBC weapons effects. In addition to large unit order of battle, the analysis of the adversary should include doctrine for C^2, logistic support, release procedures for the use of NBC weapons, TBM forces, special operations, and paramilitary forces. NBC defense planning examines adversary COAs in terms of operational objectives, large-scale movements, lines of communications (LOCs), and the phasing of operations. NBC defense support to operational planning helps to identify significant facts and assumptions about the total battle space environment and the adversary. This information includes details regarding adversary NBC weapons/toxic material capabilities, limitations, and potential COAs. NBC defense assessments provide products such as vulnerability analyses. These are used by the JFC to support the commander's estimate of the situation and concept of operations, and by the joint force staff to produce their respective staff estimates. In turn, these estimates form the basis for operational planning by identifying, developing, and comparing friendly COAs and assessing the impact of an NBC environment on each friendly COA. NBC defense planning and analysis assists the JFC and joint force staff to visualize and assess the full spectrum of adversary offensive NBC weapons capabilities across all dimensions of the battle space. Specifically, NBC defense planning by the staff helps to determine the following:

- The idiosyncrasies and decision-making patterns (i.e., weapons release procedures) of the adversary's strategic leadership and field commanders.
- The adversary's strategy, intention, or strategic concept of operation for use of NBC weapons, which should include the adversary's desired end

state, perception of friendly vulnerabilities, and adversary intentions regarding those vulnerabilities.

- The composition, dispositions, movements, strengths, doctrine, tactics, training, and combat effectiveness of adversary forces with an offensive NBC capability.
- The adversary's principal strategic and operational objectives and lines of operation.
- The adversary's NBC weapons' strategic and operational sustainment capabilities.
- The adversary's ability to conduct IO and use or access data from space systems to support his targeting process.
- The adversary's NBC weapons'/storage locations' vulnerabilities.
- The adversary's capability to conduct asymmetric attacks against global critical support nodes.
- The adversary's relationship with possible allies and the ability to enlist their support.
- The adversary's capability to operate advanced warfighting systems (e.g., smart weapons and sensors) in adverse meteorological and oceanographic conditions.

TACTICAL-LEVEL NBC DEFENSE PLANNING

1-3. At the tactical level, the size and location of the battle space are influenced by the physical location of adversary land, air, naval, space, and other forces that could pose a direct threat to the security of the friendly force or the success of its mission. The extent to which the effects of the battle space environment are analyzed at the tactical level is largely dependent on the mission and planning time available. At a minimum, tactical-level forces should analyze the battle space environment in terms of military objectives, avenues of approach, and the effects of an NBC environment on personnel, military operations, weapons systems, and force mobility. The tactical-level assessment of a military adversary should concentrate on factors such as the capability, disposition, tactics, and training status of tactical units or factional groups that could interfere with mission accomplishment. NBC defense at the tactical level will be based on, and result in, a higher degree of detail than would be necessary at higher levels of military operations.

SECTION II – JOINT FORCE PLANNING CONSIDERATIONS

Multiple factors (see Figure 4-1) must be considered in planning for operations across the range of military operations. These planning considerations include factors such as intelligence collection and analysis, situational awareness, common standards for NBC defense, and HSS.

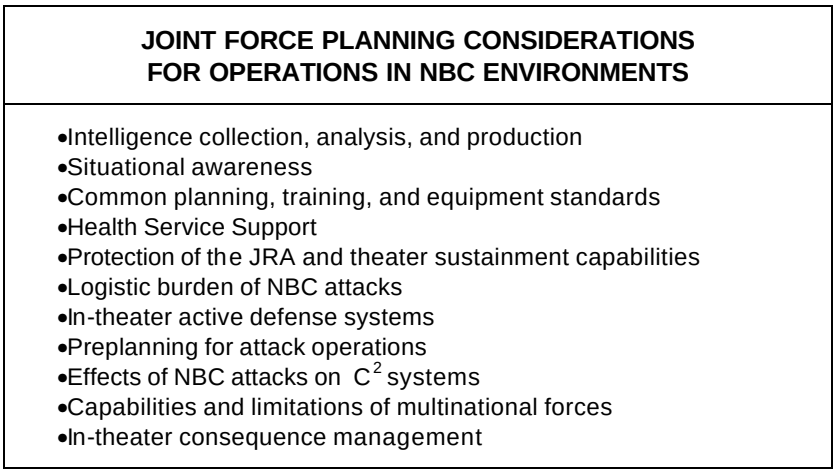


Figure 4-1. Joint Force Planning Considerations for Operations in NBC Environments

2-1. JTF intelligence collection, analysis, and production must give appropriate attention to regional NBC threats. Peacetime assessments emphasizing order of battle and operational concepts should support focused assessments of indications and warning in crisis and transition to war. Of particular importance is ensuring the dissemination of threat data and assessments to units down to the lowest level, including subcomponents of US and multinational commands and tactical-level headquarters such as brigade, wing, and/or regiment. Assessments should include identification of industrial sites containing toxic materials that would present a hazard to deployed forces if sabotaged or destroyed.

2-2. Ensuring adequate situational awareness is a central concern for planning. An integrated warning and reporting system provides a significant measure of protection by allowing friendly forces to minimize exposure to the hazard. Accurate and timely understanding of the hazard and its effects minimizes the possibility of either excessive or inadequate protection of the force, maintaining a protective posture longer than necessary, or misusing NBC defense assets. Procedures also ensure linkage with the TMD warning systems. Warning system provisions also address the need to dewarn personnel based on an alarm causing units to increase their protective posture.

2-3. Common standards for NBC defense—especially in training, exercises, and equipment maintenance—are used to enhance joint force capabilities. Gaps in the NBC defense capabilities of multinational forces are identified to promote effectiveness in both planning and operations. The JTF mission analysis will produce joint mission-essential tasks (JMETs). For each JMET, the conditions under which implementation must be conducted will facilitate establishing realistic standards, which in turn form the basis for training and for assessing readiness. This process is facilitated by the UJTL, which provides a standard description of key joint tasks for action across the range of military operations.

2-4. HSS NBC defense integrates into the planning process to support unit readiness. Key elements include casualty estimation, prophylaxis (including immunizations), active medical surveillance, diagnostics, mass casualty management, evacuation, and patient decontamination requirements for HSS

operations. JTF plans should recognize that NBC attacks have the potential to create mass casualties, and the treatment and evacuation of NBC casualties will be difficult and hazardous both to the patients and to medical personnel and facilities.

2-5. The JRA and theater sustainment capabilities must be protected. A successful adversary NBC attack on an essential POD or other critical logistic facility can degrade JFC OPTEMPO and force generation capabilities. Mitigation measures focus on maintaining support to combat operations and rapidly restoring the degraded capabilities.

2-6. Protecting forces from the effects of NBC attack will stress the logistics system. The resupply of protective clothing and equipment and repair parts, medical supplies (antidotes and antibiotics), and other resources must be factored into computation of JFC resource requirements.

2-7. In-theater active and passive defense systems will be allocated according to factors such as the JFC's DAL. Planning should consider deployment configurations and concepts of operations that maximize the defended areas of available systems.

2-8. Preplanning for attack operations should be integrated into the deliberate planning processes at multinational, joint, and component levels. Attack operations are prioritized and may be a high NCA priority at any point in a crisis, during the transition to war, and during hostilities as a means to deny an adversary the capability to produce, store, transport, or employ NBC weapons.

2-9. NBC attacks can degrade C² systems. Limitations will result from the requirement to operate in NBC protective equipment, from contamination of equipment, and from the effects of electromagnetic pulse (EMP) on electrical and electronic equipment. In order to maintain effective IO, the JFC plans for countermeasures to ensure continued operations.

2-10. Where multinational operations are envisioned, JTF planning assesses coalition member capabilities for NBC defense and interoperability with US forces in NBC environments. The planning process should consider the implications and feasibility of diverting US assets and capabilities to support HNs and other multinational members in meeting common operational objectives.

2-11. The JFC plans for in-theater consequence management; that is, mitigation and management of the effects of NBC attacks. For purposes of multinational cohesion, maintaining access to basing and logistic facilities, and minimizing casualties and damage, every effort should be made within available resources to reduce HN vulnerability to NBC attacks and improve HN ability to mitigate the effects of such attacks. This will require close JTF coordination and cooperation with USG civilian agencies, HN military and civil authorities, and possibly international organizations (IOs), nongovernmental organizations (NGOs), and private voluntary organizations (PVOs). Here, too, it may be necessary to provide US military assets (equipment, personnel, and supplies) to support HNs.

SECTION III – NBC DEFENSE SUPPORTING PLANS

NBC defense plans address tasks and support requirements during mobilization, deployment, employment, sustainment, redeployment, and postconflict. NBC plans also address support during the various phases of an operation.

PLANNING GUIDANCE

3-1. When the NCA, through the CJCS, directs a COCOM to conduct military operations, it identifies the combatant commanders and subordinate commanders to conduct those operations. The commander's responsibilities include considering the implications of a potential adversary's NBC capabilities not only in the adversary's geographic region, but also in other regions, including the US.

3-2. This responsibility extends to the assessment of adversaries who are belligerents in a conflict as well as opportunists not directly engaged who may take advantage of a conflict to threaten US interests. The commander also conducts planning to assure sustained operations in potential NBC environments that includes joint, multinational, and interagency dimensions.

LINKAGES

3-3. Operational tactical and NBC defense plans can be linked vertically and horizontally. Vertical linkage connects the joint functions of one level of war to another. For example, NBC defense planning is accomplished at the strategic, operational, and tactical levels; and horizontal linkage involves the synchronization of plans with different functions, such as synchronizing force protection efforts with operational-level maneuvers or fires.

SYNCHRONIZATION

3-4. Tactical- and operational-level NBC defense plans are also synchronized. For example, the TMD warning system is synchronized between service components to ensure an effective and efficient network. As part of the synchronization, each unit, regardless of level, is aware that all organizations of the US armed forces are responsible for ensuring that their forces and facilities are prepared to provide needed support to JFCs in execution of national military strategy.

NBC DEFENSE SUPPORT PLANNING

3-5. Efforts at the strategic level include mobilizing and employing assets to achieve strategic objectives in consonance with the theater combatant commanders' concept of operations. Regional NBC threats and theater strategies and plans are considered in the prioritization and appointment of forces and resources among combatant commanders. Consideration of NBC risk is integral to these assessments, including previous use of NBC weapons in the adversary's geographic region. Specific planning considerations (see Figure 4-2) for supported and supporting COCOM strategic planning emphasize and reinforce previously planned and exercised peacetime preparedness actions.

3-6. The theater/operational plans' concepts of operations impose requirements on mobilization timing and generation of necessary force capabilities. Previous peacetime planning, supporting actions, and compliance with combatant commander's force protection guidance contained in documents such as OPLANs or force protection directives ensure that forces can help sustain operations in NBC environments. As the services develop supporting mobilization plans, their theater service component commands identify additional resources required to facilitate rapid transition to operations. In particular, campaign and supporting plans must include options for generating adequate and timely force capabilities in the event of early adversary use of NBC weapons.

CONSIDERATIONS FOR SUPPORTED AND SUPPORTING COCOM STRATEGIC PLANNING

- Establish PIRs
- Take precrisis actions to prevent adversary NBC weapons employment
- Plan attack and active defense operations to prevent or minimize NBC attacks
- Plan actions to counter, mitigate, and manage the effects of an NBC attack
- Emphasize early warning and detection
- Take actions to prepare US and indigenous military forces
- Protect threatened civilians, infrastructures, and facilities

Figure 4-2. Considerations for Supported and Supporting COCOM Strategic Planning

Deployment

3-7. Strategic deployment planning is directed toward the relocation of forces and sustainment of the theater for further intratheater deployment and employment. The supported commander (using the service and functional component movement capabilities) controls, coordinates, and protects the movement of the joint force. During the crucial period, COCOMs use established PIRs to plan attack operations, active defense, and/or passive defense measures. Another key task during this phase is the establishment of protection against NBC attacks in the operational area and in other areas providing forces and sustaining capabilities. Commanders also coordinate with allies, coalition forces, and HNs on force protection deployment issues.

Sustainment

3-8. The service component commands are responsible for providing administration and logistics support to their forces throughout the phases of a campaign, subordinate campaign, or major operation. Service component commanders develop supporting plans to provide and maintain needed sustainment throughout all phases of major operations or campaigns. Logistics planners must plan for both active and passive measures to minimize the risks of NBC weapons attacks while satisfying the needs of the JFC for uninterrupted logistic support.

NBC DEFENSE PLANNING FOR FORCE EMPLOYMENT PLANS

3-9. Force employment is the strategic, operational, or tactical use of forces within an operational area. The JFC planners synchronize and coordinate active defense, attack operations, and passive defense capabilities.

3-10. In countering missile and air threats, counterforce operations planning seeks to divert, deny, degrade, or destroy the adversary's ability to execute the types of attacks (including NBC attacks) that most seriously threaten theater defenses; particularly large, tightly coordinated aircraft and missile raids that can saturate and overwhelm active defense systems. Attack operations planning also helps to constrain the adversary's reattack capability by targeting adversary NBC systems as well as production, transport, and storage facilities. Measures of effectiveness should also emphasize minimizing any collateral damage while causing degradation of the adversary's missile and air attack capabilities.

3-11. Active defense planning helps to counter NBC threats by reducing the number of missiles and aircraft arriving at key defended sites, thereby limiting the extent and intensity of the resulting contamination and compelling the adversary to consider expenditure of additional high-value systems in reattack operations.

3-12. Passive defense planning integrates use of NBC defense measures—avoidance, protection, and decontamination—to ensure continued force protection. The planning synchronizes and links active defense, attack operations, and passive defense measures.

3-13. Planning and coordination maximizes available passive defense, active defense, and attack capabilities. Organizations with a responsibility for active defense and attack operations planning must have an understanding of theater passive defense capabilities, current threat assessments, and the results of relevant analytic work. Preconflict wargames and training (including joint and multinational field exercises) integrate offensive and defensive force planning efforts.

NBC DEFENSE PLANNING FOR FUNCTIONAL COMPONENTS

3-14. Whenever the JFC organizes his force employing functional components, the functional component commander is responsible for preparing plans to direct employment of forces or available military capabilities and supporting commands. The components' plans support the theater campaign plan and may be based on planned major operations, phases of the campaign, missions, tasks, or objectives assigned to or derived by the JFC.

Air Component Command (ACC)

3-15. ACC planning recognizes that NBC attacks have the potential to significantly degrade the aerospace operating environment and the contribution of aerospace and air forces to operational objectives. For fixed or semifixed installations (i. e., airbases), near real-time warning from US and coalition information systems should reduce the possibility of operational degradation by NBC contamination. The use of shelters, particularly hardened shelters, offers aircraft protection from the effects of NBC weapons. Similarly, planning

outlines countermeasures such as using alternate bases to limit the potential damage of any particular NBC attack.

Land Component Command (LCC)

3-16. LCC planning recognizes that the ability of land forces to maneuver must not be constrained by unforeseen areas of contamination. Contaminated areas must quickly be identified, delineated, and avoided. Planning identifies alternate routes, assembly and support areas, and areas for unit dispersion to reduce vulnerability to NBC attacks. Planners are aware of factors such as—

- Higher levels of MOPP may affect joint fire support as well as C^2.
- Radio transmissions may become longer in duration or may frequently need to be repeated.
- Incidents of fratricide could increase.

Maritime Component Commander

3-17. Maritime component commander planners recognize that their forces are most vulnerable to NBC attacks when in proximity to land, such as when in port, during amphibious operations, and when constrained by restrictive water transits (e.g., canals, locks, straits, and shallow water). Maritime component commander planners also consider many other factors. Both the ship's crew and embarked personnel are vulnerable to clandestinely disseminated CB agents. With sufficient warning time, ships may be able to put to sea to avoid NBC attack, as they routinely put to sea to avoid hurricanes or typhoons. At sea, all ships are inherently able to maneuver to avoid identified NBC threats. Ships with CP systems may be able to operate for a period of time in contaminated areas. However, not all ships have CP systems and may encounter difficulties in protecting crew members. Forces afloat are mobile and thus more difficult to target than a fixed site. They can exploit this mobility to remain clear of areas of contamination, provided these areas have been identified and characterized. Amphibious forces may have more difficulty avoiding areas threatened with CB hazards, and naval forces in port and their fixed host installations may have less flexibility to avoid contamination. Port facilities, ships in dry dock, aircraft under repair, and naval construction units located at these fixed facilities may not have the opportunity to relocate from NBC-threat areas.

Special Operations Component (SOC)

3-18. SOC planners realize that the threatened or actual use of NBC weapons pose significant challenges to SOF. Due to their unique nature (small, self-sufficient, operating independently in hostile, denied, or politically sensitive areas), SOF operations can be affected by the limited NBC defense assets found within SOF formations, particularly with respect to equipment and personnel decontamination. A number of SOF mission profiles require rapid deployment into contaminated areas. The requirement for rapid worldwide mobility limits SOF to an austere NBC defense structure. Accordingly, SOF rely heavily upon preventive health measures, early detection and, when possible, contamination avoidance in NBC environments. Timely and accurate intelligence and maximum use of weather and terrain are also key considerations.

OTHER PLANNING

Sustainment and Reinforcement Plans

3-19. The capability to sustain the campaign from beginning to end sets the OPTEMPO. For example, the purpose of sustainment or reinforcement planning can be to estimate the NBC supplies, equipment, and materiel required to sustain the forces involved.

Evacuation Plans

3-20. Evacuation requirements must be planned in advance to ensure that resources consistent with theater needs are available. These include transportation, basing, and all supply classes. Noncombatant evacuation operations (NEO) plans support the theater campaign plan. Although the State Department is primarily responsible for NEO, the geographic combatant commander is responsible for furnishing support within the theater. In such instances, the operation may be in response to imminent hostile action or civil unrest in locations where the threat of an NBC attack exists.

Multinational NBC Defense Planning

3-21. Campaigns may be conducted within the context of other multinational arrangements. Planning is accomplished through both US and multinational channels. Coordinated NBC defense planning on such matters as operations, logistics (including infrastructure), intelligence, deception, decontamination, warning, detection and monitoring, and NBC interoperability is essential to unity of effort. The preparation of supporting plans addressing coordination and liaison, HN support, and the provision of mutual support are examples of essential tasks that must be accomplished.

Interagency Efforts

3-22. Information sharing across US military and USG agencies is an important concept of interagency planning. A number of USG agencies may be operating in conjunction with each other. These efforts require a strong focus on lateral coordination and the development of an effective program of interagency information sharing. For example, interagency NBC defense planning between JFC and Department of State or the Federal Emergency Management Agency (FEMA) would be conducted as a peacetime preparedness measure to support consequence management.

Chapter 5

Peacetime Preparedness and Transition to Operations

This chapter will focus on preparedness and transition to operations. Peacetime preparedness and planning for the transition to operations are based on national security and military strategies and supporting plans. The services and USSOCOM have the primary responsibility for organizing, training, and equipping forces for the full range of potential operations. COCOMs have responsibilities for organization, joint training, and integration of force elements provided by the services and USSOCOM to meet peacetime, war, and MOOTW requirements. All elements in the US armed forces are responsible for ensuring that their training for individuals and organizations meets the requirements of the COCOMs for operations in NBC environments.

SECTION I – PEACETIME PREPAREDNESS

The basic elements needed for maintaining adequate preparedness are a clear understanding of the threats and operational requirements, both overseas and in the US, as well as unity of effort. To support these requirements, commanders' mission analyses identify specific mission-essential tasks for individuals and organizations that facilitate operations in NBC environments. The US armed forces are also responsible for appropriate military support within the US to counter adversary threats and employment of NBC weapons directly against the US. Such domestic military activity is subject to constitutional, statutory, and policy restrictions.

PREPAREDNESS IN THE US

1-1. Commanders of forces and facilities in the US are responsible for assessments of vulnerabilities that may compromise peacetime preparedness, given the NBC threat and the potential utility to state and nonstate actors of NBC attacks against US civilian and military targets. A number of state and nonstate adversaries may choose early NBC employment against the US civilian population and infrastructures, as well as military forces and facilities, in the expectation of achieving an early, decisive advantage in pursuit of their objectives. Commanders' actions to reduce vulnerabilities take account of their assigned missions and supporting plans, as well as the UJTL.

1-2. Commanders must maintain current assessments of the NBC threat in the US, integrating their efforts with other USG agencies, including appropriate law enforcement and intelligence organizations. Of particular importance are facilities essential to training, staging, deploying, and sustaining forces for operations.

1-3. Peacetime planning and supporting actions must include plans to minimize vulnerability to and mitigate the effects of NBC attacks in order to maintain required force preparedness. Plans are exercised in order to provide maximum deterrent effect on potential adversaries. Commanders are responsible for coordination with civilian authorities and agencies to prevent and, if necessary, mitigate and manage the consequences of deliberate or accidental NBC employment or similar toxic material events in the US. Detailed interagency processes guide the US armed forces in providing MSCA to cope with such events.

1-4. The key tasks to be undertaken in the US in order to reduce the vulnerability of US forces to NBC attacks are enforcing OPSEC, maintaining emergency NBC response plans, assuring redundant force capabilities, maintaining effective NBCDE, and visible joint and interagency planning training and related preparations.

1-5. Attacks at locations essential to deployment may delay operations. Emergency response immediately after an NBC incident will determine the suitability of that location to continue deployment activities. Installations supporting deployment must have timely access to specialized equipment, personnel, and units needed to identify and provide early warning of an NBC attack. Joint and interagency plans, training, and exercises should visibly demonstrate the ability of the US to maintain its essential deployment, sustainment, and employment capabilities.

PREPAREDNESS IN THEATER OPERATIONAL AREAS

1-6. Peacetime preparedness for operations in NBC environments includes measures taken by commanders in theater operational areas abroad. All commands undertake vulnerability assessments and supporting actions similar to those described for US terrority with appropriate emphasis on aerial and sea POEs and PODs, vulnerable foreign civilian populations and infrastructure, nonmilitary and foreign military support personnel, and deployed US forces and facilities. The commands also undertake cooperative actions in peacetime with governments and armed forces of allies and potential coalition partners to facilitate sustainment of operations in NBC environments. US ambassadors and their country teams have primary responsibility for coordination with their host country government. Commanders in theater operational areas must coordinate their actions with the country team to help maintain peacetime preparedness.

PEACETIME PREPAREDNESS AND PREDEPLOYMENT ACTIONS

CONDUCT NBC THREAT ASSESSMENT AND EVALUATE ENEMY CAPABILITY

1-7. Commanders should establish an NBC threat assessment team that consists of intelligence, medical operations, NBC staff, and other personnel as necessary. The team should assess operational and medical intelligence reports, epidemiological findings, local observations, and other indications so they can advise the commander on the likelihood of NBC attacks against probable deployment locations. Of particular interest in the planning phase is the assessment of enemy capabilities in terms of NBC agent production, delivery systems, and historical employment doctrine. Output from the assessment will

help to ensure that planning, training, and equipping for NBC defense provides the proper focus in recommendations for the commander.

EVALUATE FORCE AND UNIT STATUS

1-8. Commanders must ensure personnel have the necessary defense training and equipment to sustain operations in an NBC environment. They should pay particular attention to the amount and currency of training, the quantity and condition of equipment and supplies, and the medical force protection status (i.e., vaccination and antibiotic status). Common standards for NBC defense help to maximize effectiveness and prevent unanticipated vulnerabilities in joint force capabilities.

TRAINING READINESS

1-9. To ensure the joint forces training readiness status is based on a common standard for NBC defense, the joint force command produces JMETs. For each task, the conditions under which task performance must be conducted supports providing realistic standards which, in turn, serve as the basis for assessing force and unit status. This process is supported by the UJTL, which provides a standard description of key tasks across the range of military operations. Further, see Appendix B for a matrix that indicates the relationship between stated/implied UJTL tasks for NBC defense at the strategic theater, operational, and tactical levels of war.

COORDINATED PLANNING

1-10. Commanders task their NBC staff to work with the intelligence, medical, operations, and other staff sections in establishing coordinated and detailed plans for NBC defense. These plans should specify responsibilities, procedures, and relationships for all phases of NBC defense.

CONDUCTING TRAINING

1-11. NBC personnel coordinate or provide general NBC defense training for unit personnel and training for specialized teams such as monitoring, survey, contamination control, readiness support, and other augmentees as appropriate. Also, they help identify the NBC individual and collective training requirements for unit personnel.

MEDICAL PROTECTIVE MEASURES

1-12. Commanders should ensure their personnel in, or subject to deployment to, NBC threat areas receive prophylactic antibiotics based on recommendations from medical authorities. Considerations will be given to the medical threat, attack probability, logistics stockpiles, and other available protective measures. In addition, the commander and medical personnel should emphasize good sanitation and hygiene measures as some of the most important and least costly of protective measures against both naturally occurring diseases and biological attacks. Personnel should protect food and water, maintain personal cleanliness, and properly dispose of waste.

PLANNING/PREPARING CB DEFENSE EQUIPMENT AND SUPPLIES

1-13. Units should prepare their NBCDE and supplies for individual and team use through actions such as shipping/delivering detection, sampling and analysis equipment, and medical supplies to deployment embarkation points. Much of the equipment and supplies for biological defense are also appropriate for chemical defense. Unique to biological defense are vaccines and antibiotics for medical treatment which may require cooling or refrigeration during transport, as may some medical samples being shipped to laboratories for analysis.

NBC LOGISTICS PLANNING—AGENT DETECTION

1-14. BW point and standoff detectors will also add to the unique biological defense deployment requirements. Some BW point detector supplies will also require cold storage (i.e., reagents) and select equipment for BW detection requires contract logistics support (CLS). Deployment planning ensures that detection equipment and supporting CLS elements arrive concurrently. Planners prepare estimates for the amount of decontaminants that may be used. Logistics planners identify sources for decontaminants and resolve issues that may arise with regard to procurement, storage, or deployment. For example, during Operation DESERT SHIELD, logistics planners identified that CB decontaminants (i.e., High-Test Hypochlorite) were available in theater, thereby precluding possible intertheater transport of bulk decontaminants.

SECTION II – TRANSITION TO OPERATIONS

JTF actions taken before the initiation of hostilities can assist in determining the setting for future operations. There are multiple planning and operational considerations that support the actions involved in the transition to sustained operations.

PLANNING CONSIDERATIONS

INTELLIGENCE

2-1. At the advent of a crisis or other indication of potential military action, JFCs continue to examine available intelligence estimates. As part of the joint IPB process, JFCs involve their J-2s and NBC staff early in the planning process in order to focus intelligence effort to refine estimates of enemy capabilities, dispositions, intentions, and probable COAs. JFCs direct reconnaissance, surveillance, and target acquisition operations by elements of the joint force to further develop the situation and gain information critical to decision making. SOF can be employed for special reconnaissance or other human intelligence operations. JFCs can use a broad range of supporting capabilities to develop a current NBC intelligence picture. These supporting capabilities include national intelligence and combat support agencies (for example, National Security Agency, Central Intelligence Agency, Defense Intelligence Agency, and National Imagery and Mapping Agency).

ORGANIZING AND TRAINING FORCES

2-2. Preparing the operational area also includes organizing and, where possible, training forces to conduct operations throughout the operational area. The training focus for all forces and the basis for exercise objectives should be the combatant commander's JMETL.

MAINTAINING THEATER ACCESS

2-3. JFCs establish and maintain access to operational areas in which they are likely to operate, ensuring forward presence, basing, freedom of navigation, and cooperation with allied/coalition nations. In part, this effort is national or multinational, involving maintenance of intertheater (between theaters) air and sea LOCs.

LOGISTICS SUPPORT AND SUSTAINMENT

2-4. Thorough logistic planning for deployment and sustainment during operations is particularly critical, to include, inasmuch as possible, active participation by all deploying and in-theater US and multinational forces.

ISOLATING THE ENEMY

2-5. With NCA guidance and approval and with national support, JFCs use active means to isolate enemies by denying them allies and sanctuary. The intent is to strip away as much of enemy capability or freedom of action as possible while limiting the enemy's potential for escalation.

PROTECTION

2-6. JFCs must protect their forces and their freedom of action. This protection dictates that JFCs be aware of and participate as appropriate in regional political and diplomatic activities. JFCs, in concert with US ambassadors, may spend as much time on regional political and diplomatic deterrent efforts as on direct preparation of their forces for combat.

PHYSICAL ENVIRONMENT

2-7. Seasonal effects on terrain, weather, and sea conditions can significantly affect operations of the joint force and the NBC environment and should be carefully assessed before and during operations.

ACTIONS – TRANSITION TO OPERATIONS

2-8. Many of the actions undertaken during peacetime preparedness will continue during the transition to operations. Medical protective measures should continue to be followed and emphasized.

2-9. Commanders continue to ensure that personnel/units remain prepared through NBC defense training and monitor unit personnel and equipment status for shortfalls. Basic requirements for NBC individual equipment stockage levels and training that apply to personnel stationed in or deployable to threat areas will depend on service/component command guidance and/or war plans that set specific levels for their operating locations.

2-10. Particular attention should be paid to increased intelligence gathering to assess a potential adversary's operational NBC capabilities during this phase. Status of enemy NBC offensive and defensive capabilities should be ascertained. Intelligence should provide information concerning the movement of NBC munitions to forward locations in preparation for use. Other intelligence information that could be key indicators of potential NBC attacks include increased enemy CB defense training and the establishment of vaccination and immunization programs.

2-11. From the onset of deploying US forces to hostile areas, active measures are undertaken to enhance force protection. The air component maintains air superiority over the battle space and missions are flown aganst targets to destroy and neutralize the adversary's offensive NBC capability. Actions to prevent enemy weapons from reaching friendly targets are accomplished by defeating enemy weapon systems in the air and on the ground through active measures.

2-12. Units should deploy available IPE for each person subject to deployment to NBC threat areas. Units can ship the equipment separately for each person, or they can ship the equipment in bulk to be distributed after deployment. Regardless of the method, personnel should carry one set of protective clothing (to include a mask) when they deploy to provide immediate protection at the deployment location and any intermediate stops. Further, deploying units (i.e., NBC medical) should deploy and activate preidentified NBCDE and supplies for detection, decontamination, and medical treatment purposes. Examples of this equipment include automatic detectors, sampling and analysis equipment, decontamination systems and supplies, antibiotics, and vaccines. Requirements for issue of antibiotics, vaccines, and other medical supplies will depend on the threat at the deployment location(s).

Chapter 6

Sustained Operations

The US armed forces must be prepared to conduct prompt, sustained, and decisive combat operations in NBC environments. In considering sustained combat operations, commanders conduct actions to reduce vulnerability and protect their forces.

SECTION I - CHALLENGES

In confronting the challenges to sustained combat operations, the following six areas merit special emphasis:

- Intelligence preparation of the battle space.
- Reducing vulnerability to adversary NBC use.
- Preventing adsversary employment from NBC capabilities.
- Protecting the force.
- Multinational operations.
- Synchronization of operations.

INTELLIGENCE PREPARATION OF THE BATTLE SPACE

1-1. The continuous IPB process must account for confirmed—as well as plausible but unconfirmed—adversary capabilites, plans, and actions. The IPB process must address the capabilities and limitations of adversary NBC weapons and delivery systems, their C² and release procedures, and the indicators of intent to employ NBC weapons.

REDUCING VULNERABILITY TO ADVERSARY NBC CAPABILITIES

1-2. Vulnerabilities should be examined through continuous comprehensive risk assessments that encompass the full range of potential targets that may be subject to adversary NBC attack. When US, HN, or other civilian populations and infrastructures are at risk to NBC attack, the JFC assists the appropriate military and civil authorities to protect against, mitigate, and manage the consequences of these risks. Risk assessment and vulnerability reduction must also address the dangers posed by toxic materials, including radiological contamination and other environmental contamination from industrial operations within the JFC's theater.

PREVENTING ADVERSARY NBC WEAPONS EMPLOYMENT

1-3. The JFC should not rely solely on efforts to reduce the force's vulnerability to NBC attacks. Plans should include every effort to prevent the adversary from successfully delivering NBC weapons, using the full extent of actions allowed by the rules of engagement (ROE).

PROTECTING THE FORCE

1-4. Protecting the force consists of those actions taken to prevent or mitigate hostile actions against personnel, resources, facilities, and critical information. These actions conserve the force's fighting potential so it can be decisively applied. Offensive and defensive measures are coordinated and synchronized to enable the effective employment of the joint force while degrading opportunities for the adversary. Realistic individual and joint unit training ensures readiness to fight and win should an adversary employ NBC weapons. As a means to minimize the potential for and mitigate the effects of adversary NBC use, PSYOP can decrease an adversary's perception of the usefulness of NBC weapons and help deter their employment. Plans should include preventive medicine, joint medical surveillance, NBC casualty control, medical evacuation, and provision for readily available treatments and supplies to counter the physical effects of NBC exposure. Sufficient equipment must be available to protect not only the uniformed force but also the essential supporting US and foreign national civilian work forces. In affecting an adversary's intelligence and situational awareness, IO (including OPSEC) provide forces with a significant measure of protection by preventing an adversary from acquiring information necessary to successfully target forces and facilities.

MULTINATIONAL OPERATIONS

1-5. US military operations are routinely conducted with forces of other countries within the structure of an alliance or coalition. An adversary may employ NBC weapons against non-US forces—especially those with little or no defense against these weapons—in an effort to weaken, divide, or destroy the multinational effort. Further, JTF coordination of HN support activites will involve a number of Department of Defense (DOD) components as well as the US country team.

SYNCHRONIZATION OF OPERATIONS

1-6. Synchronization entails the interrelated and time-phased execution of all aspects of combat operations. In NBC environments, successful synchronization requires proper integration of and sequencing among ISR capabilities; passive defense measures; active defense operations; attack operations; and sustainment.

SECTION II – CONDUCTING SUSTAINED OPERATIONS

Synchronizing sustained operations involves understanding NBC defense actions. It deals with NBC defense actions during the pre-, trans-, and post-

attack phases. This section will address those pre-, trans-, and post-attack actions that could be taken to support NBC defense operations.

PREATTACK ACTIONS

REASSESS NBC THREAT AND POTENTIAL RISK

2-1. Soon after deployment, the commander and staff reassess the NBC threat and risk based on any changes in the operational situation during deployment, intelligence updates, and direct access to information at the deployment location. Commanders continuously monitor intelligence assessments, SITREPs, and other related information to prepare themselves to make an informed decision on whether or not to implement NBC defense measures. Other important factors to consider would include the time of day, weather conditions, mission demands, training status, and equipment status.

IMPLEMENT COORDINATED NBC DEFENSE PLAN

2-2. Commanders should direct implementation of a coordinated NBC defense plan developed for their unit. The kinds of actions to be implemented include, but are not limited to, dispersing available units, dispersing detectors, designating sampling locations, implementing periodic sampling and analysis, and designating shelters. If the commander has decided during the preattack period that the threat of NBC attack is sufficient, the unit/base must assume an appropriate defense posture. As the unit/base progresses through various stages of alert, NBC attack preparations occur concurrently with preparations for conventional attack. Preattack measures include disseminating protective gear, declaring MOPP levels, distributing antidotes and initiating pretreatments, activating CP systems, deploying and activating detection and warning systems, covering supplies and equipment, and readying decontamination systems. Commanders should disperse critical personnel as much as the operational situation permits. Additionally, commanders should ensure appropriate medical protective measures are initiated or continued.

PREPARE TO PROVIDE PRIMARY CARE FOR UNIT CASUALTIES

2-3. Unit commanders should have their units prepare contingency plans for treatment of unit casualties, with limited assistance from the medical staff. This may be necessary if casualties exceed the capabilities of the medical staff alone, or when response will be delayed. Medical personnel also continuously evaluate and assess the unit's health situation for indications of an NBC attack. They look for agent symptoms, unusual disease patterns, or indications of environmental contamination. Information sources include medical intelligence reports, disease and injury rates, lab analysis, and epidemiological studies. Commanders should receive advice on MOPP levels from their NBC staff experts to include input from intelligence and medical personnel.

MONITOR INTELLIGENCE INDICATORS

2-4. Intelligence, NBC, and medical staffs should monitor incoming reports for any information concerning enemy NBC capability and intentions. Forces should be alert for any unique indications of covert attacks.

DETERMINE AND IMPLEMENT MOPP

2-5. Based on the situation, commanders should determine and implement the appropriate MOPP level and variation.

MAINTAIN WATCH FOR COVERT ATTACK

2-6. Commanders should issue periodic reminders of the need to remain observant for signs of a covert attack. Those reminders apply to all unit/base personnel, but are particularly important for security forces, air traffic control personnel, water treatment personnel, and personnel responsible for food storage and handling.

USE ONLY PROTECTED FOOD AND WATER

2-7. Commanders should ensure personnel consume only protected food and water to avoid the possibility of ingesting covertly disseminated contamination, no matter how slight the threat may be perceived. Use of packaged foods, bottled water, and protected food preparation equipment and eating utensils are the primary means to meet this requirement.

MINIMIZE SKIN EXPOSURE

2-8. Commanders should direct personnel to minimize skin exposure to protect against hazards. Although inhalation and ingestion of agent are the primary concerns, many agents can enter the body by penetrating the skin or through cuts, cracks, or abrasions in the skin. This could be a serious problem with highly infective or toxic agents.

CONTINUE GOOD HYGIENE AND SANITATION METHODS

2-9. Commanders should require that their personnel practice proper hygiene and sanitation methods at all times.

DEPLOY AND ACTIVATE DETECTORS

2-10. Each unit, as part of their overall NBC defense plan, should deploy available detectors. Teams may deploy specialized detectors to preestablished locations according to the NBC defense plan. These locations can include sites upwind of the unit/base, along the perimeters, and/or near selected critical facilities on the base itself. If biological detectors are not available, the JFC prepares alternate plans and disperses and uses sampling supplies and laboratory capabilites to conduct sampling at key sites. Units exercise their NBCWRS to include warning and dewarning personnel.

DESIGNATE AND PREPARE SHELTERS

2-11. Commanders at locations such as fixed sites, ports, or airfields survey and designate appropriate rest and relief shelters. Protection from NBC and conventional weapons effects such as liquid and vapor contamination, blast, shrapnel, and heat should determine the suitability of buildings as shelters. In addition, the commander should designate unit responsibility for preparing and operating each shelter, and for performance of NBC reconnaissance around the shelter. Units responsible for the shelters will prepare them by sealing cracks and holes, closing all doors and windows, and adding filters to ventilation

systems or preparing to turn off nonfiltered ventilation systems if environmental conditions permit. The innermost rooms in buildings without filters make the best shelter areas in terms of the least amount of aerosol and vapor infiltration. Based on threat assessments, the commander may initiate sheltering of all non-mission-essential personnel in designated shelters, available CP shelters, or inner rooms of buildings (improvised shelters) which offer the best available degree of protection from contamination when the possibility of attack is imminent. Personnel should remain in these areas when not performing mission-essential tasks.

WATCH FOR ATTACK INDICATIONS

2-12. All personnel should be alert for signs of attack. Personnel specifically monitoring air and land approaches (such as active air defense units, security forces, and air traffic control personnel) should be particularly alert for indications of attack.

COVER UNPROTECTED MISSION-ESSENTIAL EQUIPMENT

2-13. Commanders may direct units to cover mission-essential equipment to prevent deposition of contamination on the equipment. This will reduce the need for decontamination and minimize the possibility of personnel contaminating themselves if they have to handle the equipment at a later time.

TRANSATTACK ACTIONS

ATTACK WARNING

2-14. Transattack procedures begin when the attack begins. Detection and warning of the attack are critical to the implementation of protective measures. Attack warnings direct personnel to take cover and use protective measures.

TAKING COVER

2-15. Taking cover protects personnel against blast, shrapnel, heat, and liquid and particulate contamination. After taking cover, personnel don their masks and remaining protective gear as appropriate. Personnel able to safely observe the attack in progress should watch for any unique signs of an attack.

USING MOPP4

2-16. All personnel should assume MOPP4 (full IPE) in the absence of any other information, and remain in full IPE until directed to reduce the MOPP level. Commanders should consider using MOPP4 until they can gain more information on the type and extent of contamination. MOPP levels may then be reduced accordingly. The ultimate goal is to balance mission continuation with force survivability in order to maximize mission effectiveness. Toward this end, the concept of risk assessment (what risk a commander is willing to take in relation to the importance of the mission) is an integral part of the equation.

KEEP SHELTERS CLOSED

2-17. Units at fixed sites use shelter teams and ensure shelter doors remain closed as much as possible to limit infiltration of contamination and control personnel entering and exiting the shelter.

POSTATTACK ACTIONS

AVOID POTENTIALLY CONTAMINATED SURFACES/AREAS

2-18. Units should avoid or minimize contact with potentially contaminated areas or surfaces until there are indications that contamination is no longer a hazard.

OBTAIN AND REPORT OBSERVATIONS OR EVIDENCE OF NBC ATTACK

2-19. Units provide reconnaissance and assessment information. During initial reconnaissance, personnel should be observant for activated detectors and operating or spent delivery systems or devices such as spray tanks, aerosol generators, and submunitions or bomblets. This information will be reported to higher headquarters through established NBCWRS.

SURVEY, CONTROL, AND MITIGATE NBC HEALTH HAZARDS

2-20. Medical units should continue to take patient and environmental samples and analyze them or send them to labs for analysis. They should review medical intelligence reports, monitor patient diagnoses and symptoms, and conduct epidemiological studies to find (and inform the commander of) indications of an NBC attack. If there are indications of an NBC attack, the medical staff should administer antidotes, vaccines, and antibiotics as dictated by the agent and previous medical protective countermeasures. They should provide treatment for casualties according to established medical protocols. Such treatment includes supportive measures, isolation procedures, and antibiotic, antiviral, or antitoxic therapy.

ADJUST MOPP

2-21. Commanders should adjust MOPP to the lowest possible level consistent with identified hazards.

MAXIMIZE SHELTER USE AND RESTRICT NONESSENTIAL MOVEMENT

2-22. Commanders at fixed sites should ensure personnel continue to use shelters as long as there is residual contamination. Shelter teams should employ contamination control measures to limit the infiltration of contamination. They should continue to do so until it has been determined there is no longer a contamination hazard.

IDENTIFY AND DISPOSE OF CONTAMINATED REMAINS

2-23. Commanders should ensure mortuary affairs and medical personnel, including augmentees, identify and place suspected NBC contaminated remains in double human remains pouches (one inside the other) and mark them with “CHEMICAL” or “CHEM”, “BIOLOGICAL” or “BIO” prior to evacuation to theater mortuary affairs decontamination collection points (MADCPs).

DOCUMENT EXPOSURE

2-24. Medical staffs should clearly document exposure to NBC agent in the medical records of those personnel who have been exposed.

SAMPLE, MONITOR, AND ANALYZE FOR RESIDUAL HAZARD

2-25. Units conduct and focus their detection efforts on determining the extent of residual NBC hazards. This information is necessary to determine appropriate contamination containment and decontamination actions.

PLAN AND IMPLEMENT DECONTAMINATION AND CONTAMINATION CONTAINMENT ACTIONS

2-26. These actions must be planned and implemented to minimize operational impacts of NBC contamination if hostilities continue, and to prepare for transition to posthostility hazard reduction and environmental restoration.

TREAT AND EVACUATE CB CASUALTIES

2-27. Medical staffs and unit commanders should be prepared to treat NBC casualties. Medical staffs should arrange for evacuation of NBC casualties according to established guidelines.

POSTATTACK—ALL CLEAR

2-28. Commanders should revert to an appropriate MOPP level based on the current threat in conjunction with the "All Clear" signal. All personnel should return their MOPP gear to a ready status in anticipation of the next attack warning. At the first opportunity, they should clean and repair masks and other repairable items and replace nonrepairable items.

SPECIAL CONSIDERATIONS FOR SUSTAINED COMBAT

OPERATIONAL TEMPO

2-29. OPTEMPO, logistics operations, the HSS system, and reconstitution efforts may be adversely affected by the introduction of NBC weapons by an adversary. However, NBC weapons each present different effects and planning addresses the unique characteristics of each threat.

DEGRADATION

2-30. Generally, operations will slow as tasks—both simple and complex—are performed by units encumbered by protective equipment or exposed to NBC effects. Contamination hazards may require abandonment or limited use of facilities, transfer of forces to uncontaminated facilities, and avoidance of planned terrain and routes. In all cases, time penalties will be incurred. Additionally, adversary NBC use could severely hamper the component commander's capabilities for force generation and sustainment if there is major disruption of normal personnel and materiel replacement processes in the theater. Force reconstitution requirements may also dramatically increase. Even when sufficient protection has been afforded to individuals and units, the number of anticipated casualties may severely tax reorganization and reconstitution systems, as well as the deployed medical treatment capabilities.

IPE DEGRADATION

2-31. The use of IPE degrades individuals' and units' ability to perform assigned tasks and missions. The use of IPE can adversely impact unit capabilities, and commanders must conduct assessments and ensure the conduct of actions that

mitigate the impact of any performance degradation. Degradation could take the form of increased movement times for tactical operations and logistics, degraded communications requiring increased numbers of electronic transmissions, longer response times on requests for fire support, and degraded C^2. The impact of the use of protective equipment such as reduced sensory awareness and work rates, as well as increased fatigue and water requirements, require that individuals and units conduct realistic mission-oriented training while using their IPE.

UNIT DEGRADATION

2-32. All units can expect deficits in performance due to the impact of protective clothing and equipment. Commanders at every level can prepare their units by engaging in realistic training at a variety of MOPP levels to build confidence and cohesion. Training with protective clothing and equipment should take special account of those tasks particularly affected (e.g., those that require clear vision; precise hearing; fine motor skills; social and emotional support; or communication by facial expression, gestures, and vocal inflections). Individuals and organizations that train often and realistically under restrictive MOPP levels will be prepared for the constraints imposed by protective clothing and equipment on communication, vision, and movement.

TAILORING OF FORCES

2-33. Commanders routinely tailor force packages for employment by the conbatant commanders. This tailoring inclues maintaining force elements outside the theater of operations in order to contain logistic requirements and minimize vulnerabilities. JTF components may establish supporting and supported relationships that provide adequate and timely support in theater from locations outside the theater. The ability of in-theater components to call for and receive timely support assists in reducing vulnerabilities in theater to adversary employment of NBC weapons.

Chapter 7

Supporting Conflict Termination and Postconflict Operations

Conflict termination generally results in the end of hostilities; however, the presence of NBC or TIM can still present a volatile situation. During postconflict, actions begin to systematically eliminate an adversary's NBC weapon capability and also undertake intelligence, operational, and logistical actions such as returning equipment to CONUS. Further, the JRA's supporting role in important operations such as conflict termination and postconflict operations must be understood.

SECTION I – SUPPORTING CONFLICT TERMINATION

Successful conflict termination is the culmination of actions taken and conditions established that end hostilities and other conflicts not involving the use of threat or force. NBC weapons in the possession of belligerents or opportunists in the area of the conflict can impact on conflict termination, making it more complex, challenging, and politically charged. Conflict termination considerations should be included in combatant commander peacetime strategic guidance and campaign planning processes, and adjusted in conflicts to reflect the current situation as well as NCA and multinational objectives. Conflict termination operations in NBC environments should be directed toward two NBC-specific basic objectives: ensuring the safety of all personnel in the theater and establishing the foundation for long-term control of elimination of adversary NBC capabilities.

TRANSITION TO CONFLICT TERMINATION

1-1. Conflict termination is a deliberate process of concluding hostilities and preparing for peace. Conflict termination objectives may encompass specific goals related to the adversary's NBC weapons and supporting capabilities.

1-2. Reaching specific objectives and conditions related to the adversary's NBC weapons may be central to the achievement of overall campaign end states. JTF plans assess adversary NBC capabilities and identify possible post-hostility actions to neutralize any remaining NBC threats. Even when objectives and conditions related to NBC weapons are achieved, verification and monitoring may be necessary and important to establishing normal postconflict relations.

1-3. Normal actions and missions undertaken during the campaign will have applications for the transition to conflict termination. For example, intelligence collection and analysis will already be focused on adversary NBC capabilities. Likewise, NBC defense operations will be underway and may need to continue if

residual toxic hazards and adversary threats remain. The JTF may consider NBC-related objectives associated with disabling or destroying NBC capabilities. At a minimum, the JFC must ensure continuous surveillance of adversary NBC assets (e.g., known or suspected NBC capabilities that have yet to be captured or destroyed) as one of the planning factors for post-hostilities planning.

1-4. During the transition to conflict termination, a major milestone will be the establishment of a cease-fire, which may be arranged through diplomatic channels. Among the primary aims of the JFC during the negotiations or imposition of cease-fire conditions is to ensure that enemy NBC capabilities are identified and secured under JFC control rapidly during the initial phases of postconflict operations. Ideally, the provisions should require adversary military and civilian authorities to specify the location of all NBC weapons, production and storage facilities, and delivery systems, as well as chemical minefields and contaminated areas; establish rules against access to and transport of the wepaons and delivery systems; provide for measures to mitigate residual hazards, to include the immediate securing of all disclosed facilities and searches to examine suspected sites; and establish rules for transition to long-term disarmament, monitoring, and inspection regimes.

1-5. Intelligence on adversary NBC capabilities will be critical to conflict termination and the negotiation of cease-fire terms, and may require increased collection, analysis, and production activities. Intelligence objectives in this phase should emphasize developing a complete picture of the adversary's residual NBC assets and capabilities, including location and disposition of weapons, delivery means, production and research facilities, documentation, key military and civilian personnel, operational units, and consideration of how the adversary, presumably still in possession of NBC weapons, may react.

MITIGATION OF RESIDUAL HAZARDS

1-6. Identifying, assessing, and mitigating residual hazards in the theater of operations will be an important aspect of transition to conflict termination. US and other multinational forces must be able to detect and evaluate hazardous areas in order to contain and mitigate contamination hazards.

1-7. Operations may require the application of specialized ISR assets, continued NBC defense actions in selected zones even as hostilities are terminated, NEO, and the execution of in-theater plans to manage the consequences of deliberate or accidental contamination. These activities may require intensive coordination and cooperation with multinational forces and HN civil authorities, as well as NGOs and PVOs that offer specialized capabilities and skills.

1-8. The JFC will determine when emergency or routine equipment retrograde procedures will be undertaken. This JFC decision entails accepting higher contamination risk when warranted by immediate (emergency) mission requirements. As conflict termination appears more certain, commanders must weigh the risks to personnel safety against operational requirements prior to cessation of hostilities.

1-9. The geographic zone in which mitigation activities will be conducted may be quite extensive as adversary and friendly occupied territory come under US and multinational control, and may be further complicated by the need to interact with local poulations, both friendly and unfriendly. The potential complexity of

this mission calls for detailed planning before transition to conflict termination. Plans should include provisions for maintaining detailed written and visual (e.g., photographic, video) records of contamination caused by NBC weapons and other toxic materials. These records may be essential for determining accountability and reparations requirements.

CONTROL AND RECOVERY OF ADVERSARY NBC CAPABILITIES

1-10. The transition to conflict termination must include a comprehensive effort to locate and secure residual NBC capabilities. Completion of search, identification, control, and recovery tasks provides a critical foundation for postconflict planning to eliminate adversary capabilities and establish effective monitoring and other controls.

1-11. A recovery, search, identification, and control plan should be established and executed with sufficient forces to gain timely control of enemy NBC capabilities. Specifically designated search and recovery task forces (S/RTFs) should be responsible to the JFC and include personnel with the technical proficiency necessary to identify and evaluate NBC weapons, equipment, and associated materiel. Figure 7-1 depicts a notional S/RTF organization. S/RTFs should also be capable of emergency response to NBC accidents or incidents. S/RTFs should be prepared to initiate operations as soon as a cease-fire is in effect or, at the latest, upon the formal cessation of hostilities. Assuming ongoing efforts by the adversary to disperse, conceal, or remove NBC capabilities, early expansion of the area under positive US and multinational control is a central concern. S/RTFs must also begin inventorying adversary NBC capabilities as well as classifying, evaluating, and mapping associated sites. Where possible, international monitoring organizations should be involved to demonstrate the legitmacy and credibility of S/RTF actions and assist in the transition to international control. S/RTF efforts should assist planners in determing the scope and requirements for disposing of enemy NBC capabilities in the postconflict phase.

1-12. S/RTFs will require clear guidance for execution of their missions, which could encomnpass a diverse set of tasks, to include the following:

- Securing NBC-related sites.
- Disabling or confiscating NBC weapons and materiel, including emergency operations to dispose of toxic materiel that cannot wait for normal processing during all phases of operations in peace, war, and MOOTW.
- Detaining adversary or third-country nationals who may be associated with NBC weapons, accountable as possible war criminals, or useful for intelligence purposes.
- Countering efforts to remove NBC assets from the adversary country.
- Caring for displaced civilians and EPWs in accordance with international law.
- Interacting with nonmilitary entities, especially to provide accurate and timely information to IOs and news media.

1-13. Nonmilitary IOs, NGOs, and PVOs could play significant roles during conflict termination. The JFC may already have coordinated with US and HN

agencies to help manage activities such as medical treatment of NBC casualties, evacuation of remains, decontamination and management of contamination hazards, and retrograde and destruction of NBC and other toxic material. As conflict termination approaches, additional coordination may be required.

1-14. The JFC must determine the appropriate mix of forces to accomplish NBC-related conflict termination objectives. Security and compliance forces such as combat, military police, and engineer will also be needed in addition to specialized intelligence, technical, and medical personnel. SOF may also be required to perform civil affairs and PSYOP tasks specifically related to NBC aspects of conflict termination.

SECTION II – POSTCONFLICT OPERATIONS

Postconflict operations provide the basis for systematic elimination of an adversary's capabilities. For example, the JFC will maintain sufficient combat forces to enforce implementation of the peace accords; once there is high confidence that a return to hostilities is unlikely, certain combat and specialized units may be required as reaction forces and to deal with NBC-specific tasks. These may include detection, explosive ordnance disposal (EOD), decontamination, medical, military police, and other units. The JFC will also need sufficient forces to prevent or monitor clandestine reintroduction or removal of NBC weapons and material. General considerations include intelligence, operational, and logistical issues.

2-1. With a return to peace, the reduction of combat forces, and establishment of disarmament or monitoring regimes, intelligence is critical to achieving postconflict objectives related to NBC weapons. Recovery operations to secure and remove adversary NBC assets begun during the transiton to conflict and termination may require expansion of resources as more detailed knowledge of adversary capabilities is developed and as the full range of NBC-related facilities is identified.

2-2. During this period, disaffected groups or terrorist organizations may seek to strike at US and other multinational forces, as well as indigenous elements cooperating with the US. With the reduction in US force levels, force protection measures must remain adequate to deter and defeat possible NBC threats.

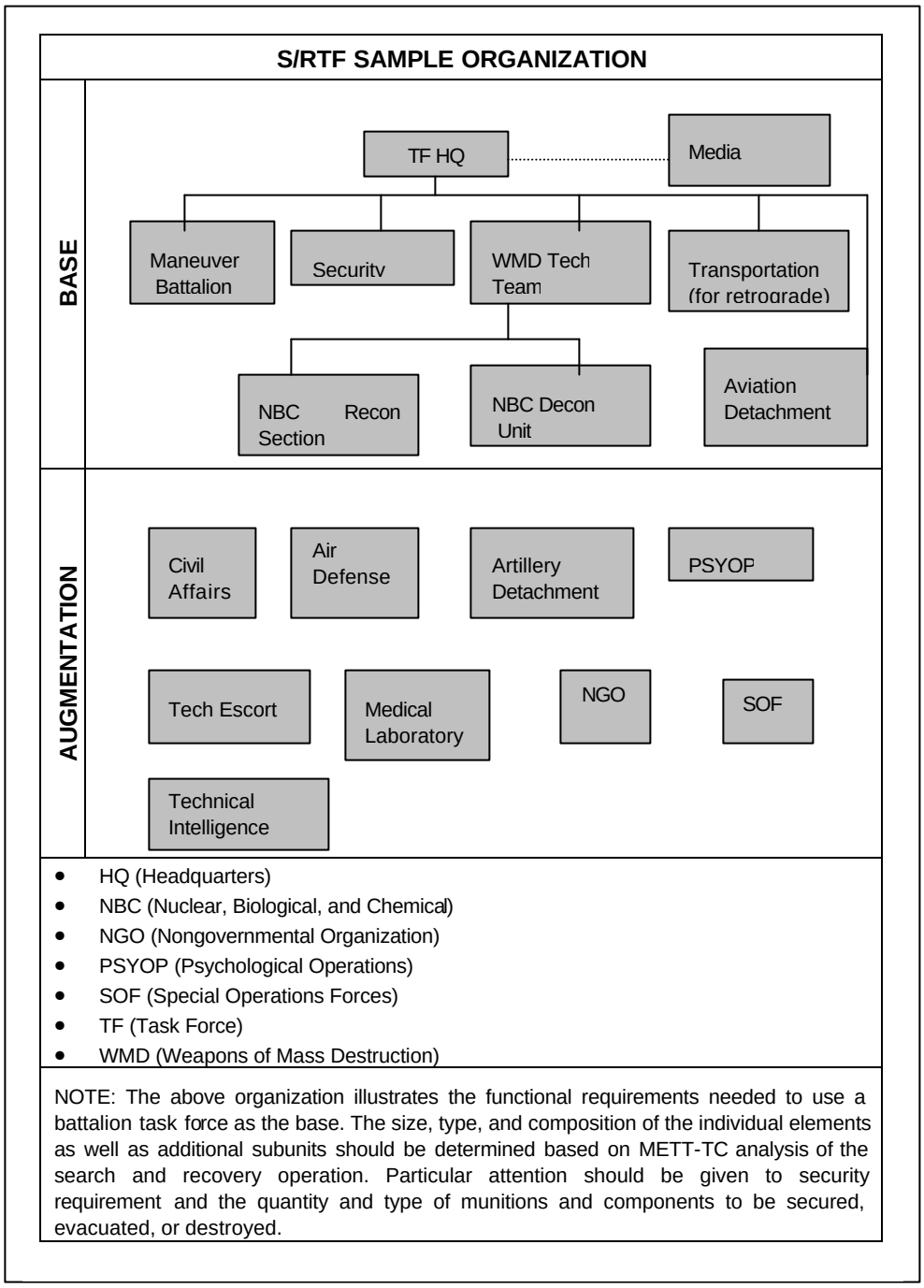


Figure 7-1. S/RTF Sample Organization

2-3. The JFC may have responsibility to help establish and enforce the initial stages of NBC disarmament, inspection, or monitoring regimes mandated by the cease-fire or peace accord. This responsibility may transition in full to an international entity (e.g., the United Nations) within a relatively short period of

time. Military support to international disarmament and inspection efforts may be required.

2-4. It is possible that decontamination actions will be required in the postconflict phase. Established TTP for decontamination of military equipment and personnel will be followed. If decontamination of civilian personnel, equipment, or facilities is required, procedures will be established in coordination with HN authorities and NGO and PVO experts as appropriate.

GOALS FOR CONTAMINATED MATERIEL RETROGRADE

2-5. Goals for contaminated materiel retrograde from the theater are mission support, protection of forces and resources from NBC hazards, and the control of contamination. The JFC will establish the relative priority among these goals in view of the circumstances at hand; in particular, operational timing and the extent of contamination. For example, under emergency conditions, the attainment of US and multinational objectives may warrant increased risks and require a more robust protective posture to limit contamination hazards and mitigate their effects. In a nonemergency situation, those same risks may be unacceptable and more stringent contamination control measures may be required to support lower individual protection levels.

2-6. Essential actions begin at the operator level and continue to the organization ultimately receiving the shipped equipment. A key role performed by the JRAC (see JP 3-10, *Joint Doctrine for Rear Area Operations*) determines if mission requirements warrant the risk of emergency retrograde or if other COAs are acceptable. To assist with requirements for deliberate contaminated materiel retrograde, the JRAC may organize a support task force to accomplish tasks from marking equipment to contamination monitoring. FM 3-4-1, *Fixed Site Protection*, provides useful assistance and TTP for this process. Redeployment planning should also address requirements for consolidation points for equipment with residual NBC contamination.

2-7. The safety of personnel is of foremost concern during the retrograde of equipment with potential, residual, or low-level NBC contamination. Services and other responsible military agencies must develop and implement specific precautionary procedures for handling and transporting their equipment. Any equipment present in the attack or downwind hazard areas may possess residual contamination. Specialized detectors may be required at specified sites in the JRA to monitor contamination. Given decontamination technology limitations, some equipment may require extensive weathering or, in some cases, destruction to meet safety objectives. Following thorough decontamination, residual contamination risks include potential vapor and contact hazards. These risk increase as contaminated equipment is consolidated and personnel work around this equipment for prolonged periods. Risks may also increase as equipment is disassembled for maintenance functions or containerized for shipment (see Figure 7-2).

2-8. The nonemergency equipment retrograde concept assumes that postconflict conditions allow time for thorough decontamination and weathering in the JOA before retrograde from the theater. Personnel assisting the JRAC with detection, monitoring, and preparation of the equipment will require stringent personal protection and specialized detectors. These preparations may require continuous operations for weeks or months. As suspect equipment is consolidated for

monitoring, decontamination, and weathering, security and buffer zones around the consolidation site provide additional contamination control measures to protect US and multinational forces as well as HN personnel.

ADDITIONAL CONSIDERATIONS

2-9. Air quality control and related legal requirements are additional considerations requiring legal advice and review prior to equipment retrograde. Once in CONUS, precautionary measures continue throughout the remaining equipment life cycle, including DOD control requirements, premaintenance monitoring, and other periodic monitoring.

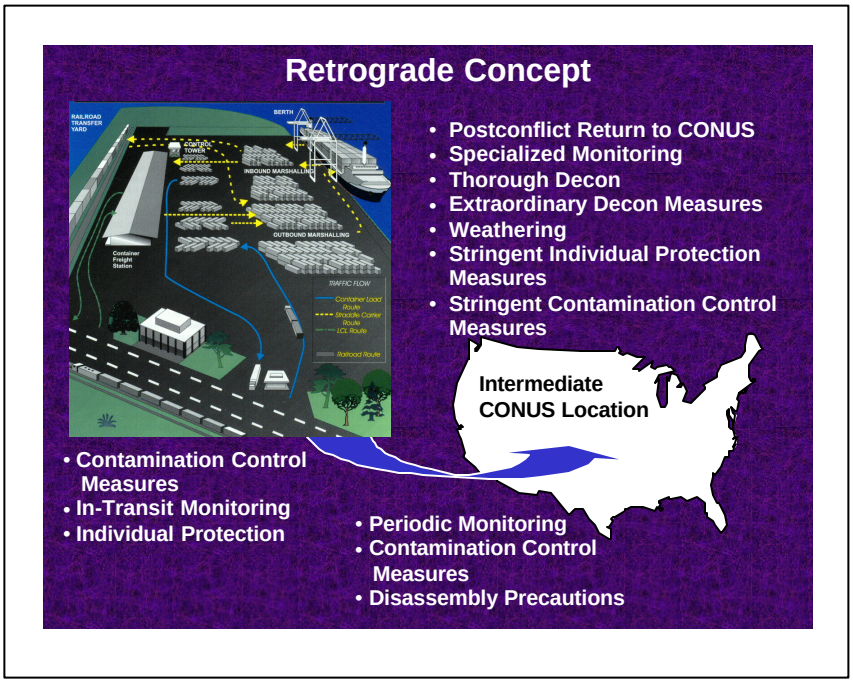


Figure 7-2. Deliberate Contaminated Material Retrograde Concept

Chapter 8

Rear Area Operations

US forces maintain OPTEMPO and generate combat power to sustain operations and achieve operational and strategic missions. Theater-level sustainment from the JRA is crucial for the required deployment, reception, staging, onward movement, and integration for support of joint force command missions. JFC planning and operations helps to ensure that units in the JRA can continue to support accomplishment of assigned missions in an NBC environment.

SECTION I – JRA COORDINATION

Theater-level logistic support is generally furnished from service-operated and other functional fixed sites throughout the JRA. Logistic NBC defense operations in the JRA are based on service and site requirements, but will be coordinated with the JRAC and base cluster commanders (when designated). One of the JRAC's responsibilities is NBC defense integration. Component commanders will incorporate NBC plans, exercises, equipment considerations, individual decontamination measures, and preventive measures into their area and base cluster defense plans. They will also position NBC defense personnel and assets in their AOs to support current mission requirements and facilitate future operations, in accordance with JFC and area commander directives and priorities.

1-1. The JRAC, as defined in JP 3-10, *Joint Doctrine for Rear Area Operations*, is responsible for coordinating the overall security and area damage control efforts of the JRA. Specifically, the JRAC incorporates provisions and procedures for NBC defense to include warning and reporting procedures. General coordination responsibilities for JRAC include the following:

- Coordinates JRA security.
- Dedicates force protection assets to integrate security, conserve resources, and prevent support degradation.
- Establishes the JRA tactical operations center (if required) with joint intelligence center interface.

SPECIFIC COORDINATION RESPONSIBILITIES

1-2. The JRAC ensures that JRA commanders and staffs incorporate appropriate NBC planning, exercises, equipment, personnel decontamination measures, and preventive measures into overall security planning and operations throughout the JRA. Table 8-1 shows other specific responsibilities.

Table 8-1. JRAC-Specific Responsibilities

JRAC-SPECIFIC RESPONSIBILITIES	
• Security Plan/Posture	• Chain of Command (if granted)
• Threat Estimates/Threat Response Forces	• Base Criticality and Vulnerability Assessments
• NBC Defense Plans/NBCWRS	• Area Air Defense
• Unit and Facilities Positioning/Stationing	• Infrastructure Development and Positioning
• Multinational and HN Liaison	• US and HN Legal Guidelines
• Key LOC Security	• Additional Security Forces (as required)
• Prioritize Security for Key Operations	• Adjacent Force Coordination
• Civil Affairs and Judge Advocate Support	• Tactical Combat Force (if established)
• Intelligence, Counterintelligence, and Law Enforcement Networks	• Liaison with Naval Coastal Warfare Commander (NCWC)

BASE CLUSTERS/BASE COMMANDERS

BASE CLUSTERS

1-3. Fixed sites will fall into a base or base cluster category depending on geographical dispersion, activities, and functions. For example, a port designated as a base cluster might consist of berthing, railhead, and marshaling area bases; all part of a synchronized port NBC defense plan. In turn, the base cluster commander controls and coordinates the base defense plans of separate base commanders. Each base commander develops plans which include a NBC defense annex and may also include a cover, camouflage, deception or smoke annex. Further details on base defense are addressed in JP 3-10 and JP 3-10.1, *Joint Tactics, Techniques and Procedures for Base Defense.*

BASE CLUSTER COMMANDERS

1-4. When designated, base cluster commanders are generally responsible for coordinating the defense of the bases within their base cluster and integrating base defense plans into a base cluster defense plan. Unless specifically delegated to him, the base cluster commander does not have tasking authority except as provided during emergency situations addressed in JP 0-2, *Unified Action Armed Forces.*

RESPONSIBILITIES FOR BASE CLUSTERS

1-5. The base cluster operations center (BCOC) becomes the primary focus for controlling and coordinating base cluster NBC defense and for tracking NBC resource status and task execution. (Note: A BCOC should only be established if delegated authority to plan, direct, coordinate, integrate, and control base cluster defense activities.) The BCOC establishes an alternate BCOC, maintains linkage with the rear area operation center (RAOC)/rear area tactical operations

center (RTOC) or JRA tactical operations center, as required, and provides facilities and housing for base liaisons.

BASE COMMANDERS

1-6. In an emergency, the base commander is considered an area commander with authority and command for execution of base defense actions to include the employment of transient forces in the base area (JP 0-2, Unified Action Armed Forces). Specific responsibilities include:

- Establishing a base defense operations center (BDOC) with linkage to BCOC/RAOC/RTOC as required (see BCOC note above).
- Establishing an alternate BDOC.
- Augmenting defense with transient forces in the base area.

TRANSIENT COMMANDERS

1-7. Transient commanders in the vicinity of fixed sites may be required to support base defense with their organic assets, including NBC defense capabilities. In force projection operations, commanders quickly move combat power away from the POD to reduce force vulnerability (e.g., dispersing rotary wing assets shortly after arrival at the POD during Operation DESERT SHIELD). However, since combat sustainment flows through the POD, the transient commander has a vested interest in assisting with NBC defense emergencies if required.

FIXED SITE TENANT COMMANDERS

1-8. Tenant commanders of forces assigned to a base/base cluster retain responsibility for unit protection and NBC defense. However, tenant commanders may also be tasked to—

- Help prepare/integrate base defense plans.
- Conduct and/or support individual, unit, or US/HN civilian NBC defense training.
- Provide BDOC/BCOC staff with NBC expertise.
- Provide NBCDE support (i.e., decontamination or engineer equipment).
- Provide tenant-sector or base NBC emergency response teams and support (i.e., NBC survey and monitoring teams, NBC casualty collection points, contamination control teams (CCTs), MOPP exchange points, etc).

NBC DEFENSE STAFF PLANNER

1-9. General responsibilities of the staff planner in the JRA include the following:

- Ensure NBC threat is identified/disseminated.
- Communicate NBC threat in plans/orders.
- Train forces to the threat.
- Assess NBC readiness/vulnerabilities.

- Identify NBC defense requirements.
- Develop/recommend NBC defense guidance.
- Track requirements/execution.

SECTION II – JRA LOGISTICS PLANNING FACTORS FOR NBC DEFENSE OF FIXED SITES, PORTS, OR AIRFIELDS

Combat forces are vulnerable to NBC attack during entry operations and during movement to areas of military operations. Fixed sites can be centers of gravity because they are vital for sustaining, enhancing, and controlling combat power.

COUNTERMEASURE CONSIDERATIONS

ATTACK WARNING AND DISSEMINATION

2-1. Timely warning of NBC attacks and subsequent spread of contamination is essential. The JFC has the responsibility, in coordination with the HN, to establish an effective and timely warning system and to exercise this system on a recurring basis.

PROTECTIVE POSTURES

2-2. Logistic planners must consider the vulnerability of HN and other civilian workers to attack, and plan accordingly. The JFC is responsible for ensuring that mission-essential civilian workers receive appropriate equipment and training, and are integrated into area NBC defense plans.

POSTATTACK RECONNAISSANCE

2-3. Understanding the nature of possible contamination by NBC agents is central to adopting an effective concept of operations that reduces the risk of casualties and cross-contamination, while ensuring rapid resumption of operations after an attack.

DECONTAMINATION

2-4. A chemical or biological attack may contaminate essential operating areas. Accordingly, local commanders must have available the capability to decontaminate operating surfaces, materiel handling equipment, aircraft, and exposed military cargo to the extent required to sustain operations. Large area facilities (e.g., ports) with throughput capacity higher than required allow flexibility to shift operations to uncontaminated locations within the facility. At smaller facilities, however, an attack could reduce throughput capacity to a level below the requirement.

CONSIDERATIONS FOR POES AND EN ROUTE FACILITIES

2-5. POEs and enroute fixed sites may be targeted in order to disrupt or inhibit US military deployments. Commanders of intermediate logistic bases and POEs must also take action to protect their facilities, (including supporting staging areas, as well as rail and road networks) against the effects of NBC attacks.

CONSIDERATIONS FOR APODS

2-6. While each APOD is unique, a few general considerations are important. The size and operational flexibility of the site will affect the commander's options for contamination avoidance. Because it is unlikely that all of the operational areas of an APOD will be contaminated at any one time, it is particularly important that the commander know the location of hazard areas, requirements for working and parking areas, and the availability of runways and taxiways.

CONSIDERATIONS FOR SPODS

2-7. In large-scale operations, equipment and materiel normally enter the theater on strategic sealift ships and offload at SPODs. If port managers and operators are properly prepared to survive the attack and sustain operations, NBC attacks may not cause significant long-term degradation of military logistic throughput capacity. This is especially true at large ports where many piers, storage areas, and much of the materiel handling equipment may escape contamination. Operations in these cases may be limited more by the effects of the attacks on the local workforce and nearby civilian population.

HANDLING OF CONTAMINATED MATERIAL, EQUIPMENT, AND HUMAN REMAINS

MATERIEL AND EQUIPMENT

2-8. The geographic combatant commander is responsible for ensuring that all materiel and equipment returned to stock or retrograded from the theater is decontaminated and safe for transport. Joint and service TTP are required to protect individuals against low-level NBC hazard exposure, conserve valuable assets, identify requirements for the return of equipment and personnel to the US, and maintain DOD-life-cycle control of previously contaminated equipment.

HUMAN REMAINS

2-9. The geographic combatant commander has responsibility to search, recover, tentatively identify, and evacuate remains from the AOR. To complete this task, the COCOM's affected area commander establishes an MADCP. The MADCP is an operational element under the oversight of the Joint Mortuary Affairs Office (JMAO) and is manned by specialized mortuary affairs and NBC defense personnel. Unique MADCP equipment is maintained in operational project stocks and is supplemented by theater assets as required.

2-10. The area commander's principal responsibility with respect to contaminated remains is to ensure that all remains are rendered safe for transport into the US and for release to mortuaries. Remains contaminated with chemical agents can generally be rendered safe by external decontamination. Biologically contaminated remains must be embalmed and transported in appropriate containers (or other equivalently effective contamination control methods authorized by qualified medical authority) prior to movement from the theater. When conditions permit, personnel remains will be evacuated to primary military port mortuaries in CONUS.

2-11. In some circumstances (such as large-scale NBC casualties), the area commander may need to authorize alternative procedures for the disposition of human remains. If decontamination capabilities are not available, contaminated remains may have to be buried in place following emergency burial procedures. In instances of mass fatalities, the area commander, on advice of the JMAO, may authorize mass burials. The JMAO will direct and control subsequent disinterments.

Chapter 9

Health Service Support

This chapter provides HSS considerations for planning and conducting joint NBC defense operations. HSS for NBC defense operations will be performed during all phases of military operations. The combatant commander should plan for these HSS aspects in the NBC defense portions of the theater campaign plans and orders.

SECTION I – HEALTH SERVICE SUPPORT

HSS remains a service responsibility, as outlined in JP 402, *Doctrine for Health Service Support in Joint Operations*. As more nations develop and use WMD, the probability of US forces encountering these weapons will increase. HSS planning is one aspect of meeting this challenge. The enemy use of WMD can cause large numbers of casualties and require special handling that can drain medical resources. The combatant commander must therefore plan to use directive authority to ensure the proper coordination of HSS to the force (to include adequate shelter, food, medical prophylaxis, medical pretreatments, immunizations, antidotes, and fluids).

DEFENSIVE MEASURES

1-1. There are a number of interrelated defensive measures that should be included in the planning aspects associated with HSS in an NBC environment. These measures can include military surveillance of key sectors to deter the dissemination of chemical or biological agents (from a ship-, aircraft-, missile-, or ground-based source) or medical defensive measures to protect personnel at risk against exposure, infection, or intoxication.

1-2. Other actions can include physical defensive measures to reduce the risk of personnel inhaling any chemical agent or biological aerosol that may be present. Further, although the detection of a biological aerosol is not itself a countermeasure, effective detection plays a key role in enabling the efficient use of countermeasures.

MEDICAL MANAGEMENT

1-3. The medical management of casualties resulting from use of WMD (particularly biological agents) is a problem of managing large numbers of individuals with infectious disease or toxins, exposure to chemical agents, and injuries resulting from nuclear weapons. Medical units will require augmentation to decontaminate incoming casualties. Each element of the medical treatment and evacuation process must be evaluated, especially as it pertains to multinational and HN interrelationships. The fact that the source of

the exposure may have been artificially created by deliberate, hostile means will not change the basic principles of prevention and treatment. For instance, in the event of a biological attack, the most important factor in providing operationally relevant information and adequate medical management is the rapid and accurate identification of the agent. In contrast to naturally occurring epidemics in which the disease incidences increase over a period of weeks or months, an artificially induced epidemic will peak in a few hours or days. Since a biological attack may be silent or nearly so, the first indication of a problem may well be the appearance of a wave of casualties in which medical personnel are unable to differentiate natural disease epidemics from overt or covert enemy attacks. Onset of illness following exposure to toxic agents may range from minutes to weeks. Some potential biological agents are transmissible among humans, so the method of spread after the initial attack will be an important planning consideration.

1-4. There are unique aspects of medical management after biological attacks that require special alertness and training. Timely identification and communication of the threat are essential for force survival. Casualties may not occur at the same time as they would in the case of saturation bombing or a massive surprise attack with nerve agents. The degree of exposure to the agent and host resistance may cause the onset of illness to be spread over a number of hours or days. An increasing casualty load is anticipated with relatively few initial casualties and a greater number over successive hours or days until a peak is reached. An exception to this aspect would be an attack with biological toxins that might create an immediate and dramatic mass casualty situation.

1-5. Decontamination and CP for NBC attacks are particularly important if the situation necessitates a prolonged stay in a presumptively contaminated area. Medical management must provide adequate shelter, establish uncontaminated food and water intake, and ensure preventive measures and treatment is available. Demands for military medical support to neighboring civilian populations following such an attack will be intense, especially if the attack contaminates neighboring civilian populations with a concentration of very young, very old, and those already suffering from underlying disease or other forms of weakening stress. Medical facilities security must also be planned.

SECTION II – MEDICAL INTELLIGENCE

The Armed Forces Medical Intelligence Center can assist in the theater threat assessment by evaluating the state of a potential adversary's BW preparedness.

2-1. Tactical medical intelligence units conduct investigations of disease resulting from suspected enemy biological agent employment and can provide limited analyses of enemy drugs, serums, and antibiotics. They are instrumental in gathering data from the various medical units and nonmedical units. The importance of medical alertness cannot be overemphasized (see Figure 9-1).

CHEMICAL AND BIOLOGICAL WARFARE WWI AND WWII

One of the major weapons innovations of World War I, introduced by the Germans and imitated by the Allies, was poison gas. The years between the wars had seen both efforts at international agreement to ban poison gas and continued production and experimentation with it. Aside from experimentation carried on in the Soviet Union with the approval of the latter, the Germans simply kept up with other powers in the 1920s and 1930s until major breakthroughs led to the development of nerve gases on an increasing scale during World War II. Tested on POWs and on concentration camp inmates, nerve gases also claimed some victims as a result of accidents and errors in the production process but were never employed at the front.

The decision by Hitler not to use the nerve gases was made on the basis of several considerations. The one which we now know to have been false was the belief that the Allies also had nerve gases. Of great importance was the evident reality of great Allied air strength, obviously capable of making good on the repeated public announcements that poison gas would be used in retaliation for any German use of it, either on the Eastern Front or anywhere else. An equally significant restraint on the Germans was their lack of gas masks of any sort for much of the country's civilian population.

The British built up substantial stocks of phosgene and mustard gas, both widely used in World War I. They had been willing to use this weapon in 1940 if the Germans succeeded in establishing a substantial beachhead in an invasion. In 1944, Churchill would urge the use of gas either against the sites from which the V-1s and V-2s were about to be launched or elsewhere in retaliation for these new forms of indiscriminate bombardment, but contrary advice from his own military chiefs of staff and the objections of the Americans prevented any such employment of poison gas.

The US built up a very large stock of the gases used in World War I for employment in case either the Germans or the Japanese turned to this weapon. Although the possibility of the use of gas in combat was considered in the preliminary discussions of the invasion of Iwo Jima and the Japanese home islands in 1945, such projects were always vetoed by the President or dropped by the military on their own. The shipment of CW shells to the theaters of war for use if retaliatory employment proved necessary led to the greatest loss of life in a gas accident during the war. A German air force bombing raid on ships in the harbor of Bari in Italy on December 2, 1943, led to the destruction of one ship (among 17) which carried 100 tons of mustard gas in bombs; over a thousand Allied personnel and Italian civilians being killed as a result.

Far larger numbers had been killed both accidentally and intentionally by the Japanese, who had built up a large poison gas program beginning in the last months of World War I. They repeatedly used gas for experiments and in the war against China. Perhaps because this employment was almost all carried out before Japan attacked the US, Britain, and the Netherlands, the Western Powers chose not to retaliate in kind. This subject still awaits further investigation. The employment by the Japanese of a German-invented gas grenade in the Imphal campaign in the summer of 1944 was seen as an isolated, and quite possibly unauthorized, incident. Improper safeguards and processes left hundreds of former workers in the Japanese gas factory at Okunoshima in damaged health.

Figure 9-1. Chemical and Biological Warfare WWI and WWII

If a considerable amount of information about CW projects remains obscure, in part because records are still closed, this is even more the case for BW. Even the World War I attempts by the Germans to spread the cattle and horse disease anthrax in the US and Canada have been covered by a veil of obfuscation. Some work on BW agents was done in the interwar years in several countries and continued into the war years.

There was a program during World War II for the development of biological weapons in Great Britain, which had been inaugurated by Neville Chamberlain in response to German threats of secret weapons and was pushed forward with Churchill's full support. With some material assistance from the US, this project was able to produce a small amount of anthrax (under the code name N) in 1943 and large amounts in 1944. The whole project was designed for deterrence and, if necessary, retaliation should the Germans resort to BW. No quantities sufficient for use appear to have been made available during the war. There was substantial American research on bacteriological warfare agents; again, for any necessary retaliation. Little is known in open sources about Soviet work in this field, whatever it may have been.

By far, the most extensive work in the field of BW appears to have been done by the Japanese. Established already in 1932 in Manchuria, the Japanese center for research and experimentation was employing thousands of workers in a massive installation operating under a 1936 formal Imperial order by the late 1930s. Huge quantities of poisonous bacteria were produced and tried out on human guinea pigs in tests which began in 1932, killed thousands, and were filmed for demonstrations to Japanese army officers. Delivering the BW materials proved a major problem when the Japanese tried them out in their war with China and this use occasionally backfired.

During the Pacific War, the experimentation was extended to American and British POWs. Allied intelligence came to know about the Japanese program at least in outline from 1942 onward, although the British, unlike the Americans, discounted the evidence that was coming in. For obvious reasons, the Americans were especially concerned about the possible use of the Japanese balloon campaign as a carrier of bacteriological materials. The BW agents were, however, not used against the Western Powers; in August 1945, the Japanese blew up the facilities, murdered the surviving prisoners, and tried hard to cover up the whole episode.

SOURCE: Gerhard L. Weinberg, A World at Arms,Cambridge University Press, 1994

Figure 9-1. Chemical and Biological Warfare WWI and WWII (Continued)

SECTION III – PREVENTIVE MEDICINE PRINCIPLES

In an NBC environment, preventive medicine services will be in great demand. Many deaths may occur if there is an effective biological agent attack. Demands for military medical support to both military and civilian populations will probably be intense. Preventive medicine personnel must assist the commander in determining the health hazards associated with nuclear fallout and chemical or biological contamination, such as safe food and water sources, and in determining when to use prophylaxis, pretreatments, immunizations, and other

preventive measures associated with NBC warfare. Preventive medicine personnel must be aware of the NBC threat in the theater and continually update the informational data base on diseases, potential disease vectors, and the susceptibility of troops to these diseases. In NBC conditions, diseases known to exist in the area may be manifested but not transmitted to our forces. The appearance of a disease or vector not known to exist in the theater is an indication that BW agents are being introduced into the area. The continuous application of general preventive medicine principles is very important; especially following an effective NBC attack.

3-1. The tendency of individuals in an emergency situation to become careless regarding food and water sanitation, general hygiene, and other common disease control measures can be a significant cause of secondary spread of disease. Maintaining safe food and water supplies differs for military personnel deployed throughout the operational area and for the civilian population.

3-2. Following an NBC attack, all food except canned or otherwise well-protected items should be thoroughly inspected to ensure adequate protection was provided. Foods determined to be safe must be protected against secondary contamination. Protective measures must be practiced by those who transport, store, prepare, and serve food, as well as by those who consume the food. In addition, consideration must be given to applying control measures necessary to prevent contamination of foodstuffs by insects, rodents, and other vectors.

3-3. It is difficult to maintain satisfactory personal hygiene and field sanitation, particularly in unfamiliar climates. Strict measures are required for waste treatment and sewage. Water surveillance and sanitation control measures must be instituted. The best insurance of water sanitation is water purification or boiling. However, water purification tablets and boiling water for consumption and hygiene purposes are not effective against certain biological agents such as viruses, spores, or toxins. The reverse-osmosis water purification unit can remove most biological agents, thus providing a safe water supply. All water supplies must be approved by the designated medical authority before distribution and consumption.

3-4. Washing with soap and water is the most effective simple personal hygiene measure for the control of communicable diseases. It is the responsibility of each person to apply standard individual protective and sanitary measures.

SECTION IV – PATIENT EVACUATION

Forward evacuation within the combat zone is normally the responsibility of the respective component command using organic service-assigned assets, e.g., Army, Marine, Navy, SOF fixed- and rotary-wing aircraft. Air Force fixed-wing aircraft with specialized aeromedical evacuation crews can assist with forward evacuation if the terrain, distance, and other related factors are not conducive to using organic assets.

4-1. Movement of patients within the theater is the responsibility of the geographic combatant commander. The Commander in Chief, US Transportation Command is responsible for establishing, operating, training, and maintaining the common-user aeromedical evacuation system for

movement between theaters and from theaters to CONUS. An NBC environment forces the commander to consider to what extent he/she will commit evacuation assets to the contaminated area. If a task force is operating in a contaminated area, most of the medical evacuation assets will be operating there.

4-2. There are three basic modes of evacuating casualties (personnel, ground vehicles, and aircraft) in the combat zone. Cumbersome MOPP gear, climate, increased workloads, and fatigue will greatly reduce personnel effectiveness. When evacuation personnel are sent into a radiologically contaminated area, OEG must be established. Based on the OEG, commanders decide which evacuation assets will be sent into the contaminated area. Every effort will be made to limit the number of evacuation assets that are contaminated. To ensure contamination of evacuation assets is limited, patients should be decontaminated before transport.

SECTION V – PATIENT DECONTAMINATION AND TRIAGE

The management and treatment of contaminated casualties will vary with the tactical situation and the nature of the contaminant. Each medical unit must have a plan that can be put into effect immediately. Decentralization is necessary—casualties must not be forced to wait at a central point for decontamination.

5-1. All medical units should have comparable sets of medical items and decontamination equipment for treatment of contaminated patients originating in their area. Decontamination of the patients serves two purposes: it prevents the patients from absorbing additional contaminants, and it protects other patients and medical personnel treating the patient from contamination.

5-2. MTFs will establish decontamination areas. When casualties arrive at the MTF, they must be seen at a triage point and directed to the proper area. The triage officer must determine if the patients have a surgical or medical condition that requires priority over decontamination.

5-3. Ninety to ninety-five percent of all decontamination can be accomplished by removing the outer clothing and shoes. This can usually be accomplished before admission without interfering with medical treatment. Actions should be taken immediately to ensure all personnel suspected of being contaminated by a biological agent are cleaned and kept free of disease-producing organisms.

SECTION VI – MEDICAL FACILITIES

Because of the medical unit location, threat capabilities, and the unique aspects of NBC operations, there is the potential for mass casualties.

6-1. Even though few chemical casualties become fatalities, they require intensive HSS. In the first few hours after an NBC attack, medical facilities can be swamped with casualties who require lengthy hospitalization.

6-2. At the same time the patient load is increasing, other factors combine to complicate HSS operations. Operations in MOPP gear reduce individual and collective efficiency at a time when manpower requirements increase. Patient decontamination requires manpower and will reduce the number of personnel available to treat casualties. Heat stress in MOPP will require more frequent rest breaks, further reducing care capability. Establishing and maintaining a facility with a CP system and continuously monitoring the air inside the shelter for contaminants calls for additional personnel. These procedures decrease the ability to treat patients efficiently and effectively.

SECTION VII – IMPACT ON HSS

The contaminated battlefield will be a difficult environment in which to operate. Stress from MOPP, reduced visual and tactile senses from protective equipment, a reduced communication capability, and a sense of isolation are all detrimental to military operations. The HSS system has several unique aspects that must be considered.

7-1. Contamination may be transferred to the MTF if patients are evacuated to MTFs without being decontaminated. All personnel should perform personal decontamination or be decontaminated by a buddy or their unit immediately after being exposed to NBC contaminants, mission permitting. However, patients may arrive at an MTF that are still contaminated. In either case, patients must be decontaminated before they are admitted into the MTF (with or without CPS). This is required to prevent the medical staff from becoming casualties; ordinarily, the medical staff works without protective equipment to maintain full patient care capabilities.

7-2. Many HSS assets are fixed or possess limited mobility. They are often located near C^4I activities and MSRs; hence, they must continue to operate within the contaminated environment. Treatment cannot cease while the unit relocates. Thus, the MTF requires CPS to permit the medical staff to provide full patient care.

7-3. Production of liquid and gaseous oxygen normally will not occur in an NBC-contaminated environment. Although newer production plants have been designed for potential operation in such a state, generally production will be stopped until air quality improves. Product transfer operations (gaseous and liquid) will also be curtailed unless medical and flight line requirements demand such. Supply and medical units must develop plans to resupply critical gases and cryogenic liquids in the contaminated area from primary and alternate sources. These sources include production and storage organic to the unit, from other services, from HN support, and from commercial contracts.

7-4. Decontamination operations are extremely resource intensive. With current medical personnel authorizations, they will not be able to manage both medical treatment and decontamination of patients. For this reason, plans must address how decontamination will be accomplished. Augmentation to provide decontamination support must also be addressed in planning.

Chapter 10

Military Operations Other Than War

MOOTW contribute to attainment of national security objectives by supporting deterrence and crisis response options. In peacetime, the preparedness of the US armed forces to succeed under any battlefield condition helps to deter potential aggressors from using violence to achieve their aims. Deterrence stems from the belief of a potential aggressor that a credible threat of retaliation exists, the contemplated action cannot succeed against a well-prepared force, or the costs outweigh any possible gains. Although the threat of nuclear conflict has diminished, proliferation of WMD and conventional advanced technology weaponry is continuing. The proliferation of the NBC threat—ranging from terrorism to advanced NBC weaponry—requires the maintenance of a full array of response capabilities.

SECTION I - INTRODUCTION

1-1. In a crisis response, well-prepared US forces must be prepared to respond rapidly, either unilaterally or as a part of a multinational effort. Thus, MOOTW may often be planned and executed under crisis action circumstances, and our forces must be ready constantly to counter enemy use of NBC weapons through effective force protection strategies.

1-2. MOOTW can occur unilaterally or in conjuction with other military operations. It is possible that US forces could be involved in MOOTW while the HN is at war, or in MOOTW that can evolve to war. MOOTW include the types of operations described in 3-07, *Joint Doctrine for Military Operations Other Than War* (see Table 10-1).

1-3. NBC defense planning support to MOOTW must facilitate parallel planning by all strategic, operational, and tactical units involved in the operation. Planners' development of NBC staff products to support operational-level planning should also be considered for release to appropriate tactical headquarters. This is especially true during initial planning periods when headquarters at intermediate echelons may tend to filter information as it travels down to tactical units.

Table 10-1. Types of MOOTW

TYPES OF MOOTW

- Arms Control
- Combating Terrorism
- DOD Support to Counter Drug Operations
- Enforcement of Sanctions and Maritime Intercept Operations
- Enforcing Exclusion Zones
- Ensuring Freedom of Navigation and Overflight
- Foreign Humanitarian Assistance
- Domestic Support Operations
- Nation Assistance and Support to Counterinsurgency
- Noncombatant Evacuation Operations
- Peace Operations
- Protection of Shipping
- Recovery Operations
- Show of Force Operations
- Strikes and Raids

SECTION II – MOOTW PRINCIPLES

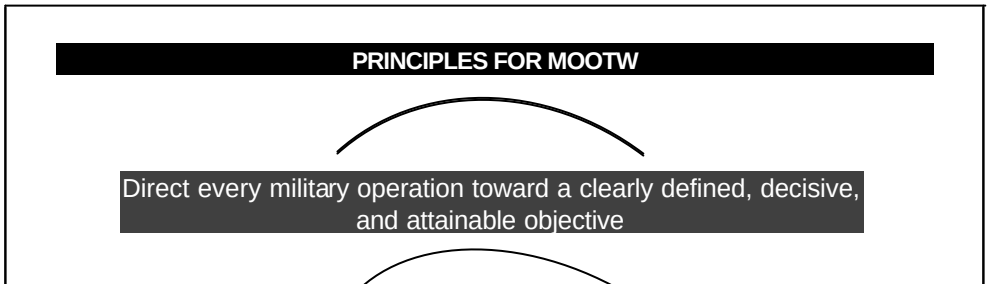
Regardless of the specific type of operation, NBC defense planning must support the principles applicable to MOOTW shown in Figure 10-1.

OBJECTIVE

2-1. Military operations must be directed toward a clearly defined, decisive, and attainable objective. Commanders understand the specific conditions and threat (i.e., NBC weaponry/TIM) they could confront and the impact these conditions could have on their missions.

UNITY OF EFFORT

2-2. In these operations, other government agencies often may have the lead. Commanders may answer to a civilian chief, such as an ambassador or a FEMA representative, or may themselves employ the resources of a civilian organization. Command arrangements often may be only loosely defined and many times will not involve command authority as understood within the military. This arrangement may require commanders to achieve objectives by understanding programs such as the civilian emergency responder incident command system (ICS) (see FM 3-21).



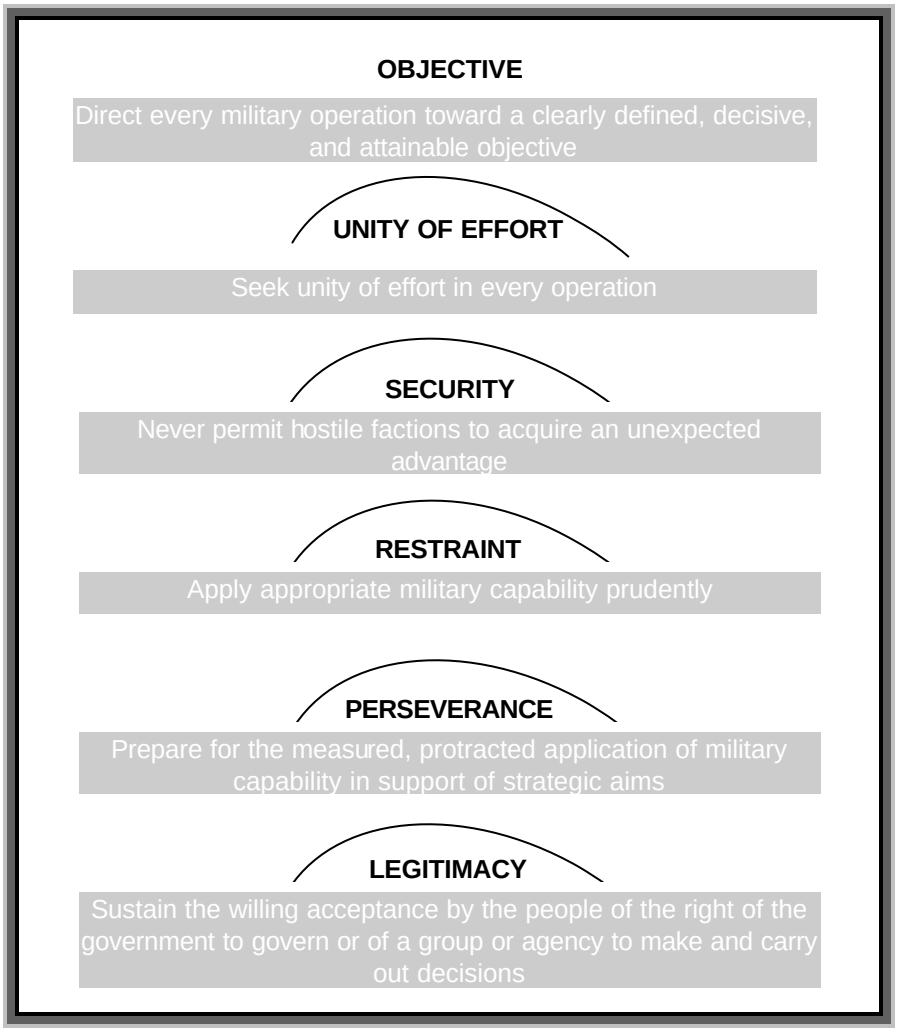


Figure 10-1. Principles for Joint MOOTW

SECURITY

2-3. Security deals principally with force protection against virtually any person, element, or group hostile to US interests. These could include a terrorist or a group opposed to the operation. JFCs also should be ready constantly to counter NBC/TIM activity that could bring significant harm to units or jeopardize mission accomplishment. IPB also identifies possible sources of TIM that could impact JFC assets.

RESTRAINT

2-4. The actions of military personnel and units are framed by the disciplined application of force, including specific ROE. In MOOTW, these ROE often will be more restrictive, detailed, and sensitive to political concerns than in war. Moreover, these rules may change frequently during operations. Restraints on

specific weapons, collateral damage considerations, and levels of violence often characterize the environment.

PERSEVERANCE

2-5. Some MOOTW may be short, others protracted. It is important to assess crisis response options against their contribution to long-term strategic objectives. This assessment does not preclude decisive military action, but does require careful, informed analysis to choose the right time and place for such action. For example, consequence management planners consider transition planning an important tool to support prompt redeployment of units once required response of recovery actions are completed.

LEGITIMACY

2-6. This principle focuses on internationally sanctioned standards. For example, commanders could use IO as a tool to support an overall effort to help enforce applicable treaty provisions.

SECTION III – MOOTW AND NBC DEFENSE PLANNING

The difference between NBC defense planning for conflict and MOOTW is one of focus; particularly in the degree of detail required for support of various actions. Many of the MOOTW missions involve interagency coordination, HN involvement, and/or a very rapidly changing environment. Limited objectives and a sometimes less-than-explicit tie to national interests may intensify pressures to restrict COA selections due to factors such as collateral damage considerations. Specific planning considerations for MOOTW include interagency coordination, C^2, intelligence and information gathering, constraints and restraints, training and education, postconflict operation, and redeployment to other contingencies.

INTERAGENCY COORDINATION

3-1. Inherent in MOOTW is the need for the military to work with other agencies of the USG as well as other nations' governments. Consensus building supports this task and can be aided by understanding each agency's capabilities and limitations. For example, planners understand DOD's role for support of Federal Response Plan (FRP) emergency support functions, and the relationship with other agencies such as the Federal Bureau of Investigation, Department of State, or FEMA.

COMMAND AND CONTROL

3-2. There is no single C^2 option that works best for all such operations. JFCs and their subordinates should be flexible in modifying standard arrangements to meet the specific requirements of each situation and promote unity of effort. For example, planners are familiar with the FEMA supported emergency civilian ICS so as to support effective interaction with local jurisdictions.

INTELLIGENCE AND INFORMATION GATHERING

3-3. Force protection can be significantly improved with the proper mix of intelligence and information collection. As soon as practical after an operation is declared, JFCs and planers determine the PIRs needed to support the operation.

CONSTRAINTS AND RESTRAINTS

3-4. A commander tasked with conducting a joint operation other than war may face numerous restrictions in addition to the normal restrictions associated with ROE. For example, there may be restrictions on the type of information or CB samples that can be shared with HNs.

TRAINING AND EDUCATION

3-5. US forces may be directed to conduct MOOTW with very little notice; however, NBC defense remains one of the core essential taskings for a unit. The proliferation of the NBC threat requires that units be prepared for operations in an NBC environment.

POSTCONFLICT OPERATIONS

3-6. Planning for postconflict operations should begin as early as possible—preferably before the conflict begins. Decontaminating material or transitioning operations to civil authorities are examples of postconflict activities that typically begin with significant military involvement, then move increasingly toward civilian dominance as the threat wanes and civil infrastructures are reestablished.

REDEPLOYMENT TO OTHER CONTINGENCIES

3-7. Forces deployed for MOOTW may be called upon to rapidly redeploy to another theater. Planners should consider how they would extricate forces and ensure they are prepared and ready for the new contingency.

SECTION IV – VULNERABLITY ASSESSMENT

NBC defense support to MOOTW focuses on security to prohibit a hostile faction from acquiring an unexpected advantage through use of NBC weapons or TIM. The NBC staff planner coordinates and conducts vulnerability assessments to help define the possible hazard and what defensive countermeasures would be applicable. This process of determining vulnerability can include defining the battle space environment, describing the battle space's effects, evaluating the adversary, and determining adversary COAs.

BATTLE SPACE ENVIRONMENT

4-1. The NBC staff planner defines the battle space environment through analysis of the battle space. The analyzed battle space includes the AOs and AOIs designated for each MOOTW. The amount of time available for

predeployment planning is usually critically short and there are some planning factors that should be considered during the analysis.

4-2. Use geospatial information and services support, including geospatial softcopy and/or hardcopy to assess possible locations that may be targeted by the enemy or conversely, assess enemy WMD targets that are of concern to US forces.

4-3. Analyze significant characteristics of the battle space which would influence an adversary's operations. These factors can include geography, weather, infrastructure, and health conditions.

4-4. Identify the legal parameters that bind the activities of the HN, adversary nation or group, and US forces in the region. This includes treaties (CWC/BWC), domestic and international law, status-of-forces agreements, and ROE restrictions.

4-5. Review the recent history of the situation. Determine whether there are any indicators of NBC or TIM activity to help identify the scope of the problem which precipitated the introduction of US forces.

4-6. Identify the general characteristics and capabilities of all potential threats. This should include natural (disease, environmental hazards) and/or manmade NBC/TIM threats.

BATTLE SPACE EFFECTS

4-7. The NBC staff planner analyzes the battle space to determine what effects the enviroment may have on friendly and adversary capabilities and COAs. In light of an NBC/TIM threat, planners evaluate air, sea, and land avenues of approach and withdrawal for both friendly and enemy forces.

4-8. Planners determine the effect of terrain and weather on various COAs and assess the effect of NBC/TIM on US forces and/or mission-essential civilian support personnel.

ADVERSARY ASSESSMENT

4-9. The NBC planner evaluates the adversary. In MOOTW, the adversary could greatly differ from the adversary normally associated with wartime operations. Often these adversaries are not willing to commit to decisive engagements, and deliberately attempt to avoid force-on-force confrontations. Additionally, in some MOOTW the term "adversary" must be broadly applied to include individual terrorists or nonstate-sponsored groups.

4-10. Planners identify adversary NBC/TIM capabilities. In MOOTW, the JFC may initially have limited or incomplete intelligence on adversary capabilities. MOOTW are difficult to plan for in advance because they are difficult to predict and are usually not covered in an existing OPLAN. As such, the JFC will rely heavily on outside agencies and on allied and HN support to acquire the necessary information and to fill the intelligence gaps regarding adversary capabilities. Planners know the adversary's employment doctrine; and this assessment will assist the JFC in assessing how adversary capabilities could be employed against possible high-value targets.

ADVERSARY COAS

4-11. Planners integrate available information to determine the adversary's most probable COA with regard to use of NBC/TIM. It begins by defining the likely adversary objectives and developing adversary COAs. All COAs must be considered. In MOOTW, this is the culminating step of a risk management process which aids the commander in making threat-appropriate, cost-effective, and rational decisions to meet friendly objectives and thereby accomplish the mission without being surprised by an unanticipated adversary action. See FM 3-14, *NBC Vulnerability Analysis*, for TTP on the conduct of assessments to support NBC vulnerability analysis. NBC defense support to specific MOOTW requires flexibility, innovation, and a detailed understanding of each type of operation.

SECTION V – NBC DEFENSE SUPPORT TO SPECIFIC MOOTW

5-1. NBC defense staff products for support of MOOTW may include NBC R&S overlays in support of joint operations; contaminated obstacle overlays in support of cleanup operations; and collateral damage overlays in support of strikes or raids. Additionally, areas where disease is prevalent or environmental contamination exists should also be the subjects for analysis. Products developed for support MOOTW might include, but are not limited to those shown in Table 10-2. The products listed in Table 10-2 may be modified as appropriate to support several different types of MOOTW.

5-2. In addition, NBC defense planning support to MOOTW may involve use of specialized NBC defense assets, such as low-level chemical monitoring support from the US Army Soldier Biological Chemical Command, Chemical Biological-Rapid Response Team (CB-RRT). Detection of TIC could entail support from the USMC Chemical Biological Incident Response Force (CBIRF),and radioanalytical/health physics support could be furnished by a USAF radiological assessment team (see FM 3-21 for additional information on other example DOD response agencies that could provide MOOTW support).

Table 10-2. NBC Products That Can Support MOOTW

NBC PRODUCTS THAT CAN SUPPORT MOOTW
• NBC Vulnerability Assessment
• Biological Detection Surveillance Overlay (BIDS/LRBSDS)
• Radiological/Chemical Reconnaissance Overlay (M93A1 System)
• TIM Hazard Assessment
• NBC Sample Evacuation Plan Overlay
• NBC Collateral Damage Overlay
• NBC Weather Effects Matrix
• NBC Technical Intelligence Assessment

Appendix A

USA NBC CAPABILITIES

The USA must be prepared to conduct prompt, sustained, and decisive combat operations in an NBC environment. An adversary's NBC capabilities can have a profound impact on US and multinational objectives, campaign plans, and supporting actions and therefore must be taken into account in operational and tactical planning.

SECTION I – USA (ORGANIZATION)

The capabilities of USA NBC units include the ability to provide decontamination, NBC R&S, large-area smoke, and staff support to commanders. Most NBC units are 100 percent mobile. Basis of allocation is determined on the numbers and types of units being supported and METT-TC. This section will address the army component NBC organization in theater, the types of NBC units that could be available within the theater, force tailoring, and the roles of NBC unit commanders and staff.

1-1. NBC units operate throughout the theater of operations. Numbers, types, and locations of NBC units and headquarters would depend on the operational situation. Allocation of some NBC assets is theater-dependent. Exact numbers of NBC units in a specific AO may vary because of the theater-specific differences in NBC support requirements. NBC support requirements will be determined by establishing NBC defense priorities. NBC support requirements must be identified in OPLANS to insure that NBC support will be incorporated into the TPFDL.

COMMUNICATIONS ZONE

1-2. JRAs are not a safe haven from combat operations. Enemy forces capabilities may present a significant NBC threat to JRAs. Because of this, COMMZ assets require smoke, NBC R&S, biological detection, decontamination, and NBC staff support. See Table A-1 for an example that reflects an assigned NBC brigade with three NBC battalions controlling NBC recon, recon/smoke, smoke/decontamination, and biodetection unit assets. Additionally, the senior logistics headquarters receives an NBC center (NBCC) team to perform NBC staff functions. The planning allocation for the COMMZ NBC brigade is as follows:

- The brigade headquarters and headquarters detachment.
- Two or more NBC battalion headquarters to provide C^2 for assigned companies.
- One biodetection company.

- One NBC recon company.
- Four smoke/decontamination companies (plus one per USMC division, six per USMC Marine Expeditionary Force, one per SPOD or APOD, and one per USAF air operating base).
- One NBC recon/decontamination company (one per SPOD).

COMBAT ZONE (CORPS AREA)

1-3. The corps has an assigned NBC brigade. The number and types of NBC units assigned to the NBC brigade depend upon the corps mission and its organization. The notional corps depicted in Figure A-1 includes biological detection, NBC recon, decontamination, and smoke assets. (Note: a biological detection company operates directly under the NBC brigade.) This force is a mix of NBC recon, mechanized smoke, smoke/decontamination, recon/decontamination, and biological detection units beyond those that are organic to the divisions. It allows the corps commander to send augmentation where it is needed. The planning allocation for a corps NBC brigade is as follows:

- The brigade headquarters and headquarters detachment.
- One NBC recon company; and one NBC recon/decontamination company per light armored cavalry regiment (LACR) and SPOD.
- Six or more smoke/decontamination companies (six per corps plus one per division).
- Two or more NBC battalion headquarters to C^2 assigned companies.
- One mechanized smoke company per heavy division.
- One biological detection company.

COMBAT ZONE (DIVISION AREA)

1-4. Figure A-1 depicts the mechanized and armored heavy divisions (forward deployed) with their organic NBC recon platoon. The mechanized and armored divisions do not have an organic NBC defense company; however, the division does retain an NBC recon platoon. The division relies on corps augmentation for smoke, decontamination, and additional NBC reconnaissance support. The heavy division has an NBC officer, NBC staff, and NBCC. The light infantry division does not have an organic NBC company. It relies upon corps augmentation for smoke, decontamination, and/or NBC reconnaissance. The light division has an NBC officer, NBC staff, and NBCC. Maneuver brigades in divisions have a brigade NBC officer and NBC staff noncommissioned officer (NCO). Separate heavy maneuver brigades have an NBC officer, staff, and NBC platoon (smoke/decontamination/recon) in the brigade headquarters and headquarters company (HHC).

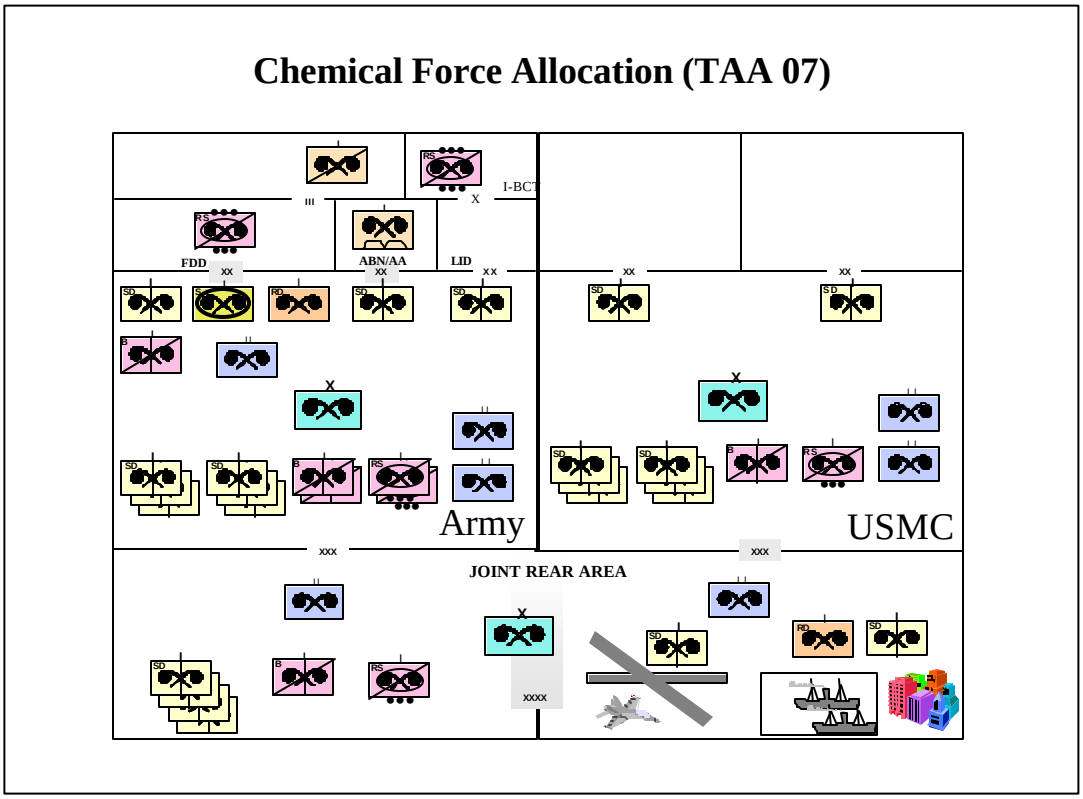


Figure A-1. NBC Structure in a Typical Theater of Operations

SECTION II – ORGANIZATION FOR COMBAT

NBC units perform their vital combat role throughout the theater of operations, from the forward line of troops back through the COMMZ. NBC units provide reconnaissance, decontamination, biological detection, and smoke capabilities to accomplish different tasks throughout the theater. The NBC C^2 structure forms these units into an organization that is responsive to commanders at all echelons; however, it may be necessary to tailor NBC unit packages to support specific requirements for a contingency operation. The COMMZ (theater) and corps structure normally includes an NBC brigade. This brigade provides NBC units to perform NBC reconnaissance, biodetection, decontamination, and smoke support throughout the COMMZ/corps area.

NBC UNITS

NBC BRIGADE

2-1. The NBC brigade plans, controls, directs, and coordinates the employment of NBC units. Because there are insufficient assets for the entire corps, the allocation of units will be based on the commander's OPLAN. The battalions are assigned missions and assets will be employed throughout the depth of the battlefield to sychronize effects and maintain initiative and agility to reallocate

(as required) based on the commander's priorities. The NBC brigade commands and controls two or more NBC battalions and separate units. The brigade headquarters is organized to provide operational, intelligence, administrative, and logistical support to subordinate NBC battalions.

NBC BATTALION

2-2. An NBC battalion consists of three to five NBC companies. The battalion provides C^2 of these companies in the COMMZ, corps, and division areas. Battalions are task organized to provide smoke, decontamination, biological detection, and/or reconnaissance support with a mix of NBC companies. The brigade organizes NBC battalions for combat based on METT-TC, masses assets, and weighs the main effort.

NBC COMPANIES

2-3. Several types of NBC companies are located in the corps and COMMZ and are organized into NBC battalions. They are not permanently assigned to chemical battalions, and the numbers and types of companies will be based on the numbers and types of MSCs (i. e., divisions) assigned to the combat zone or COMMZ. Units are task organized by the chemical brigade based on METT-TC factors. These units can include mechanized smoke companies, decontamination/recon companies, NBC reconnaissance companies, biological detection, and dual-purpose smoke/decontamination companies.

ARMORED CAVALRY REGIMENT (ACR) NBC COMPANY

2-4. The ACR NBC company provides smoke, NBC reconnaissance, decontamination, and NBC staff support to the ACR. Its smoke/decontamination platoon normally supports a cavalry squadron with either large-area smoke or equipment decontamination. However, smoke and decontamination operations cannot be done simultaneously. The LACR operates in much the same way as the ACR and also has an assigned NBC company. The LACR NBC company provides NBC reconnaissance, decontamination, and NBC staff support to the regiment.

MECHANIZED SMOKE COMPANIES

2-5. Mechanized smoke companies have light armor (i.e., ballistic) protection. They have the mobility to operate in support of maneuver forces but are vulnerable to enemy weapons when operating with forward elements. Typical missions include screening battle positions, flanks, and river crossings; obstacle breaching; and deception operations. A company can produce smoke screens up to approximately 3 kilometers (km) in width and several km in depth.

NBC RECONNAISSANCE COMPANIES

2-6. NBC reconnaissance companies provide support for elements of a corps/theater army. The unit's three platoons (24 M93A1 Foxes) provide contamination avoidance through route, zone, area, and bypass NBC recon; NBC surveys, surveillance, and sampling. Units assets are also used to detect and identify unknown chemical compounds found throughout the battlefield.

BIOLOGICAL DETECTION COMPANIES

2-7. Biological detection companies support the corps or could be task organized to provide reports directly to the JFC. Each company is equipped with 35 BIDS which are capable of providing a near-real time presumptive identification of specific biological agents. The company is arrayed to provide coverage through the supported unit's AO or to protect specific high-risk biological targets. One biological detection company also has three Long-Range Biological Standoff Detection Systems (LR-BSDS) for standoff detection of biological agents (note: detection does not equal identification).

CHEMICAL COMPANIES

2-8. Chemical companies (recon/decon) have one decontamination and two NBC reconnaissance platoons. The unit's decontamination platoon (with two modular decontamination systems) can operate one thorough (8-10 tactical vehicles per hour) or operational decon site. The unit's two NBC recon platoons (with four M93A1s per platoon) provide contamination avoidance through route, zone, area, and bypass NBC recon; NBC surveys, surveillance and sampling.

SMOKE/DECONTAMINATION COMPANIES

2-9. Smoke/decontamination companies support both light and heavy divisions. Each of these dual-purpose companies has the ability to set up equipment decontamination sites in support of brigades and division rear or provide a large-area smoke up to 4 km wide. The unit can operate up to four thorough (eight tactical vehicles/hour) or eight operational decontamination sites. Individual platoons are not capable of performing simultaneous smoke and decontamination operations; however, the company can be tailored to respond to needs for both smoke and decontamination support.

DIVISION-LEVEL NBC UNITS

2-10. The division is converting to a new NBC force structure concept that eliminates the divisional chemical company. Some heavy divisions that have not undergone the structure change may still have the chemical company. Under the new force design, each heavy division will have an NBC reconnaissance platoon which will be organic to the division cavalry squadron. Heavy divisions have an NBC staff organic to the division and receive additional NBC support from the corps when required. Airborne and air assault divisions have organic NBC companies. These companies provide smoke, decontamination, and NBC staff support under the OPCON of the division NBC officer. Light infantry divisions do not have organic NBC companies. Light divisions have an NBC staff organic to the division HHC. The parent corps receives a smoke/decontamination company for each light infantry division assigned. The division NBC officer requests appropriate support from the corps when required.

ACR/INTERIM BRIGADE COMBAT TEAM

2-12. The ACR and the interim brigade combat team have an NBC staff organic to the headquarters element. The ACR is assigned an NBC defense company with reconnaissance, decontamination, and smoke capability. Additionally, the interim brigade combat team is assigned one NBC reconnaissance platoon that is organic to the reconnaissance, surveillance, target acquisition squadron.

NBC SERVICE ORGANIZATIONS

2-13. The mission of NBC service organizations is to provide or augment NBC reconnaissance, decontamination, and staff support. The numbers and types of units in the theater of operations form the basis for allocation of this support. NBC service organizations are allocated to separate brigades, corps, and other operational-level units. NBC service organizations include JA and JB teams that provide NBC staff operations support to units over one or two 12-hour shifts. These teams also augment a tactical operations center NBCC to provide NBC staff operations support to units over two 12-hour shifts. The reconnaissance LB Team (Special Forces) provides a special forces group with NBC reconnaissance support in all environments to include enemy-held, denied, or sensitive territory. It collects NBC intelligence and provides technical knowledge pertaining to the enemy's weapons capabilities, techniques, and dispositions. Additionally, the chemical detachment organic to the HHC of each special forces group supports the group with thorough decontamination and limited NBC R&S of the special forces operating force.

MODULAR FORCE PACKAGING

2-14. To meet the requirements for a contingency operation, it may be necessary to form NBC force packages to perform specific tasks. Each force package requires a C² cell or headquarters. The force package can be built around a company, battalion, or brigade. It will be task organized to meet the specific needs of the deploying commander.

COMMAND AND SUPPORT RELATIONSHIPS

2-15. A command relationship reflects the chain of command and degree of authority. NBC units can operate in one of three command relationships: assigned, attached, or OPCON. Assignment is the normal relationship when a parent unit directly commands its subordinate units. In this case, the parent unit is responsible for all command responsibilities, personnel actions, and logistics support. The parent unit may attach a subordinate unit to a supported commander when the parent unit cannot provide adequate logistical support or timely command decisions. Attachment to another headquarters means that all command and logistics responsibilities are transferred to the receiving headquarters. OPCON is appropriate when a supported unit commander needs task organization authority over NBC units, but the parent NBC headquarters can provide continued logistics support. The parent NBC unit coordinates with logistics organizations to make this viable.

2-16. A support relationship represents the manner in which the maneuver unit is to be supported. When a support relationship is established, the parent unit retains command responsibility. The parent unit also remains responsible for logistics needs of that subordinate unit. A general support (GS) relationship is appropriate when the higher headquarters requires central control and flexibility in using limited NBC assets. In this relationship, support is to the force as a whole rather than to a particular subunit of the force. COMMZ and corps NBC units are normally retained for GS missions unless specific units require a higher degree of responsiveness. A direct support (DS) relationship provides support that is directly responsive to the needs of a specific combat, combat support, or combat service support element (CSSE). It is usually for a

single operation or a short period. A higher headquarters may use DS when it expects a change to the task organization that will require shifting of NBC units to other locations. This relationship precludes further task organization of the NBC unit by the supported commander.

2-17. In the tactical planning process, the NBC brigade staff recommends the appropriate command or support relationship between the NBC unit and the supported unit. This relationship defines the specific responsibilities between supporting and supported units.

2-18. Generally, NBC units at corps and division levels establish support rather than command relationships.

2-19. Each situation is unique and requires its own solution. Whatever the relationship, NBC unit commanders remain responsible for the missions undertaken by their subordinate elements.

TASK ORGANIZATION

2-21. NBC units work most efficiently under the control of a parent NBC unit. This organization permits close control and the most productive use of all NBC assets. The commander continuously monitors the progress of assigned tasks and shifts elements where the need is greatest throughout the AO.

2-22. The decision whether to provide NBC units in a command or a support relationship is a balance between the needs of the higher commander for flexibility and the needs of the subordinate commander for responsiveness.

2-23. The corps may provide each committed heavy division with an NBC battalion task organized to support the commander's intent and in a command or support role appropriate for the mission. Light infantry divisions are normally provided a dual-purpose smoke/decontamination company. Units are provided in either a command or support relationship. The NBC unit commander deploys his subordinate elements based on his estimate.

2-24. At each echelon, commanders use organizational principles to guide the use of NBC units. Commanders task organize to meet requirements. Mission requirements drive size and composition of task forces. A mix of NBC units is often necessary to achieve the proper balance of capabilities. The commanders give priority to the main effort. There are not enough NBC assets on the battlefield to handle all tasks. NBC units are not spread evenly across the battlefield, but are concentrated with the main effort to ensure its success.

2-25. A commander controls subordinate elements both by his presence and leadership at critical events and through use of his headquarters. The commander at each echelon uses his headquarters to control operations. He relies upon NBC unit C^2 elements to ensure that the tasks he assigns are successfully executed. These NBC C^2 elements consist of the NBC officer on the supported commander's staff, NBC unit commanders, and the staffs of those units.

ROLES OF THE NBC STAFF ELEMENTS

THEATER ARMY NBC OFFICER

2-26. The Army Service Component Command normally includes the Army Service Component Command NBC Officer (formerly Theater Army NBC Officer). He is a member of the Army Service Component Commander's special staff. He integrates NBC defense into the Army Service Component Command's plan to sustain Army forces and support joint and coalition operations.

CORPS NBC OFFICER

2-27. The corps staff includes the corps NBC officer. He is a member of the commander's special staff. He has staff responsibility within the corps for all NBC-related matters in the corps AO, including the use of the NBC brigade. He is assisted in this task by the corps NBC section. This section prepares NBC annexes, estimates, and SOPs. It operates an NBCC that processes and distributes NBC reports and maintains radiation dose status of corps units. It also prepares fallout predictions and NBC downwind hazard predictions.

DIVISION NBC OFFICER

2-28. The division staff includes the division NBC officer. He is a member of the commander's special staff. He has staff responsibility to the division commander for all NBC-related matters in the division AO, including the use of the NBC brigade. He is assisted in this task by the division NBC section. This section prepares NBC annexes, estimates, and SOPs. It operates an NBCC that processes and distributes NBC reports and maintains radiation dose status of division units. It also prepares fallout predictions and NBC downwind hazard predictions.

SEPARATE BRIGADE AND ACR NBC OFFICER

2-29. Separate maneuver brigades, ACRs, and Light ACRs have an NBC officer and NBC section organic to the brigade. Currently, separate brigades are authorized an NBC platoon with smoke, decontamination, and NBC reconnaissance capabilities. ACRs and LACRs have an organic NBC company that provides smoke, decontamination, and NBC recon support.

BRIGADE NBC OFFICER

2-30. The NBC officer at brigade level (or brigade equivalent) is the primary adviser to the commander on NBC matters. He integrates NBC and smoke considerations into the brigade planning process and coordinates current operations in the brigade area. The brigade NBC officer receives required reports from divisional and corps units operating in the brigade area. He keeps the brigade staff and the division informed on NBC activities. He passes brigade taskings to supporting NBC units on behalf of the commander.

SPECIAL FORCES GROUP NBC OFFICER

2-31. Special forces groups, airborne (SFGA) have an NBC officer and NCO assigned to the group headquarters. They function as a staff section located within the special forces operational bases (SFOB). SFGA have NBC detachments organic to the groups under the OPCON of the group NBC officer. These detachments provide NBCC and decontamination support to the SFOB

and forward operating bases. When available, LB teams (special forces recon) provide NBC recon support to special forces groups in all environments to include enemy-held, denied, or sensitive territory.

BATTALION NBC OFFICER AND NCO

2-32. Combat (and some combat support) battalions are authorized an NBC officer and nonmaneuver battalions are authorized an NBC NCO. The battalion NBC officer or NCO serve in the headquarters operations (S3) section and integrate NBC and smoke into the battalion or battalion task force's planning process. He monitors execution of the NBC portions of the operation, makes operational reports throughout the operation, and provides other required input to the brigade NBC officer.

COMPANY NBC NCO

2-33. All Table of Organization and Equipment companies except HHCs are authorized a company-level NBC NCO. The company NBC NCO is the commander's chief advisor on all aspects of NBC defense and smoke. He provides the commander with an organic source of NBC expertise for planning and conducting NBC defense operations. He ensures that all platoons, squads, and sections can operate their assigned NBC equipment. He trains company personnel to support operational or thorough decon operations.

ROLES OF THE NBC UNIT HEADQUARTERS AND STAFF ELEMENTS

HEADQUARTERS, CORPS NBC BRIGADE

2-34. The NBC brigade headquarters coordinates the combat support operations of assigned and attached NBC battalions. The NBC brigade staff integrates NBC defense, to include large area biological detection, NBC recon, decontamination, and smoke considerations into corps plans. From its command post, the NBC brigade staff then conducts the detailed planning necessary to implement the tasks assigned by the corps order. The staff's time is primarily spent acquiring and positioning resources needed for future operations.

HEADQUARTERS NBC BATTALION

2-35. An NBC battalion headquarters coordinates the combat support operations of assigned or attached NBC units. Depending on the types of companies assigned or attached, the battalion can provide smoke, decontamination, and NBC recon support in its assigned area of the corps. The command or support relationship established in the corps order determines how a division can use a corps battalion in its area. When a battalion is provided to a division, the battalion staff completes the detailed planning from its command post for the division NBC officer who is required to implement tasks in the division order. The NBC battalion headquarters can control division companies or other corps companies in addition to its own. When in DS of the division, the battalion is well suited as a C^2 headquarters for all NBC operations.

HEADQUARTERS NBC COMPANY

2-36. As with higher headquarters, the company helps the MSC NBC officer fulfill his role as special staff officer. The MSC NBC officer integrates NBC recon, smoke, and decontamination into the unit plan. The remainder of his

staff and the company do the detailed planning to support the plan. The staff solves or recommends alternatives to logistics problems that prevent completion of any critical NBC task. In some circumstances, the division NBC company may be required to provide a C^2 headquarters for attached forces. The company is the lowest NBC echelon that can plan and execute continuous operations in support of tactical forces. The platoons of the company are ideally suited for integration into task force operations and provide the priority task force with the NBC assets to accomplish its mission.

NBC PLATOON

2-37. The NBC platoon is the lowest-level conventional NBC unit that can effectively accomplish independent tasks. For that reason, NBC units rarely operate in smaller increments than this, and then only for specific actions of limited duration. Due to the limited NBC units available, some brigades and task forces may operate without dedicated NBC unit support.

CHEMICAL TEAMS

2-38. The LB (recon) team (special forces) provides NBC recon support to the special forces group in all environments to include enemy-held, denied, or sensitive territory. It may deploy augmented by Special Forces Detachment A (SFODA) team members, as an augmentation to an SFODA, or operate independently. The LB team is the lowest level that can effectively accomplish independent tasks. Additionally, the special forces chemical detachment is a 10-man detachment organized into two 4-man squads with a captain and NCO (E7) in the headquarters section. The detachment's missions are decontamination site reconnaissance, hasty exfiltration decontamination, operational decontamination, thorough decontamination, and NBC reconnaissance in rear areas.

SECTION III – ARMY ASSETS

All Army units are capable of conducting limited NBC defense operations. These operations consist of, but are not limited to, detection of nuclear and chemical contamination, performing immediate and operational decontamination procedures on individuals and equipment, deployment of nuclear and chemical detection devices, and conduct of nuclear and chemical monitoring, survey, and reconnaissance operations. The USA NBC force structure includes specialized units providing additional capabilities for NBC detection, identification, survey, reconnaissance, and thorough decontamination. USA units also provide large-area smoke and obscurant support to operations. Additionally, paragraphs 2-2 through 2-13 provide brief descriptions of USA NBC unit capabilities.

NBC RECONNAISSANCE PLATOON (HEAVY DIVISION)

3-1. The NBC Recon Platoon (Heavy Division) (see Table A-1) is capable of providing route, area, and zone NBC reconnaissance.

Table A-1. NBC Recon Platoon (Heavy Division)

Detection Equipment	Description
M21 Remote Sensing Chemical Agent Alarm	Static chemical agent vapor detector. Capable of ranges up to 5 km.
Reconnaissance System NBC M93A1 FOX	Vehicle-mounted system designed to detect, identify, and mark NBC contamination

CHEMICAL COMPANY (SMOKE/DECONTAMINATION) AIRBORNE/AIR ASSAULT

3-2. Each platoon can support either equipment decontamination or large-area smoke, but a platoon can not perform smoke and decontamination simultaneously or immediately switch between missions without a transition time. Although a platoon can be separated into separate squads for operational decontamination, the entire platoon must be available to support smoke and thorough decontamination missions. Table A-2 depicts the specialized NBC equipment organic to this unit. The unit can provide—

- Three DED sites.
- Three large-area smoke screens, each .6 x 1.4 km wide x several km long.
- Six operational decontamination sites.

Table A-2. Airborne/Air Assault Chemical Company Equipment

Decontamination Equipment	Description
*Decontaminating Apparatus: High-Pressure Washer Module XM22	Washing component of Modular Decontamination System.
*Decontaminating Apparatus: DS2 Pumper/Scrubber Module XM21	Decontaminant application component of Modular Decontamination System.
M17 Lightweight Decontaminating System	Portable, lightweight, power-driven decontaminating device.
Tank and Pump Unit, Liquid-Dispensing	Power-driven water pump.

Table A-2. Airborne/Air Assault Chemical Company Equipment (Continued)

Decontamination Equipment	Description
Pump, Centrifugal, 65 gallons per minute (gpm)	Power-driven water pump.
*Pump, Centrifugal, 125 gpm	Power-driven water pump.
Tank Assembly, 500-gallon (gal)	Portable fabric water tank.
Tank Assembly, 3,000-gal Collapsible	Portable fabric water tank.
Smoke/ Obscurant Systems	**Description**
Generator, Smoke, Mechanical Motorized M56	Large-area smoke generation system mounted on heavy variant high mobility multipurpose wheel vehicle (HMMWV).

Generator, Smoke M1057	Large-area smoke generation system mounted on HMMWV.
NOTE: *Denotes item under development.	

CHEMICAL COMPANY (RECON/DECONTAMINATION) ACR

3-3. Table A-3 depicts the specialized NBC equipment organic to this unit. The Chemical Company ACR is capable of providing the following support:

- NBC reconnaissance (route, zone, area, point, and bypass).
- One DED site.
- NBC staff support.

Table A-3. Chemical Company (ACR) Equipment

Detection Equipment	Description
Alarm Chemical Agent, Remote Sensing M21	Stand-off nerve and blister agent detector. Range is line of sight to 5 km.
Reconnaissance System NBC M93A1 FOX	Vehicle-mounted system designed to detect, identify, and mark NBC contamination.
Decontamination Equipment	**Description**
*Decontaminating Apparatus: High-Pressure Washer Module XM22	Washing component of Modular Decontamination System.
*Decontaminating Apparatus: DS2 Pumper/Scrubber Module XM21	Decontaminant application component of Modular Decontamination System.
M17 Lightweight Decontaminating System	Portable lightweight power-driven decontaminating device.
Tank and Pump Unit, Liquid-dispensing	M923 series 5-ton truck with two 600-gal water tanks and integral pump unit.
Pump, Centrifugal, 65 gpm	Power-driven water pump.
*Pump, Centrifugal, 125 gpm	Power-driven water pump.
Tank Assembly, 3,000-gal Collapsible	Portable fabric water tank.
Tank Assembly, 500 gal	Portable fabric water tank.
NOTE: *Denotes item under development	

CHEMICAL COMPANY (SMOKE/RECON/DECONTAMINATION) ACR

3-4. The dual-purpose unit can only support smoke or decontamination at any one time. Table A-4 depicts the specialized NBC equipment organic to this unit. The chemical company is capable of providing the following support:

- NBC reconnaissance (route, zone, area, point, and bypass).
- One DED site.
- Large area smoke, .6 x 1.4 km x several km long.
- NBC staff support.

Table A-4. Chemical Company (ACR) Equipment

Detection Equipment	Description
Reconnaissance System NBC M93A1 FOX	Vehicle-mounted system designed to detect, identify, and mark NBC contamination.
Decontamination Equipment	**Description**
*Decontaminating Apparatus: High-Pressure Washer Module XM22	Washing component of Modular Decontamination System.
*Decontaminating Apparatus: DS2 Pumper/Scrubber Module XM21	Decontaminant application component of Modular Decontamination System.
M17 Lightweight Decontaminating System	Portable, lightweight, power-driven decontaminating device.
Tank Assembly, Fabric, 500-gal	Portable fabric water tank.
Tank Assembly, Fabric, 3,000-gal Collapsible	Portable fabric water tank.
Tank and Pump Unit, Liquid-dispensing	M923 series 5-ton truck with two 600-gal water tanks and integral pump unit.
Pump, Centrifugal, 65 gpm	Power-driven water pump.
*Pump, Centrifugal, 125 gpm	Power-driven water pump.
Smoke/Obscurant Systems	**Description**
Generator, Smoke, Mechanical Motorized M56	Large-area smoke generation system mounted on heavy variant HMMWV.
Generator, Smoke M1057	Large-area smoke generation system mounted on HMMWV.
NOTE: *Denotes item under development	

CHEMICAL COMPANY (RECON/DECONTAMINATION), CORPS THEATER (TA)

3-5. Table A-5 depicts the specialized NBC equipment organic to this unit. The Chemical Company (Recon/Decontamination) is capable of providing the following support:

- Operation of one thorough or operational decontamination site (8-10 vehicles per hour).
- Route, zone, area, or bypass NBC recon; NBC surveys, surveillance, and sampling.

Table A-5. Corps Decontamination Company Equipment

Detection/Decontamination Equipment	Description
*Decontaminating Apparatus: High-Pressure Washer Module XM22	Washing component of Modular Decontamination System.
Decontamination Equipment	**Description**
*Decon Apparatus: DS2 Pumper/Scrubber Module XM21	Decontaminant application component of Modular Decontamination System.
Reconnaissance System (M93A1)	Vehicle-mounted system designed to

	detect, identify, and mark NBC contamination.
NOTE: *Denotes item under development	

CHEMICAL COMPANY, (BIOLOGICAL DETECTION) CORPS

3-6. The Chemical Company, Biological Detection is capable of providing five biological detection platoons, and one long-range biological standoff detection detachment. Table A-6 depicts the specialized NBC equipment organic to this unit.

Table A-6. Chemical Company (Biodetection)

Detection Equipment	Description
M31/M31A1 BIDS	Detects biological agents. Identifies up to eight BW agents. Collects samples.
LRSBDS (only organic to one biodetection company and requires aviation augmentation)	Detects aerosol clouds. Distinguishes natural from manmade events.

CHEMICAL COMPANY, NBC RECONNAISSANCE, CORPS, THEATER OF OPERATIONS

3-7. Table A-7 depicts the specialized NBC equipment organic to this unit. The Chemical Company, Reconnaissance, is capable of providing the following support:

- NBC reconnaissance (route, zone, area, point and bypass).
- Conventional reconnaissance (route, area, and zone).
- Radiation monitoring for nuclear accident incident response assistance (NAIRA).
- Chemical detection for chemical accident incident response assistance (CAIRA).

Table A-7. NBC Recon Equipment

Detection Equipment	Description
Alarm Chemical Agent, Remote Sensing M21	Stand-off nerve and blister agent detector. Range is line of sight to 5 km.
Reconnaissance System NBC M93A1 FOX	Vehicle-mounted system designed to detect, identify, and mark NBC contamination.

CHEMICAL TEAM LA (RECONNAISSANCE)

3-8. Table A-8 depicts the specialized NBC equipment organic to this unit. The chemical Team LA (Reconnaissance), is capable of providing the following support:

- NBC reconnaissance (route, area, zone, and point).
- Collection of environmental samples.
- Identification/examination of NBC contamination.

Table A-8. LA Recon Team Equipment

Detection Equipment	Description
Alarm Chemical Agent, Remote Sensing M21	· Stand-off nerve and blister agent detector. · Range is line of sight to 5 km.
Reconnaissance System NBC M93A1 FOX	· Vehicle-mounted system designed to detect, identify, and mark NBC contamination.

CHEMICAL TEAM LB (RECONNAISSANCE, SPECIAL FORCES)

3-9. The Chemical Team LB (Reconnaissance, Special Forces) is capable of providing the following support:

- NBC reconnaissance support.
- Collection, identification, and examination of NBC contamination.
- Expertise in enemy NBC systems and TTP.
- Specialized NBC protective equipment.

CHEMICAL TEAM JA (NBCE)

3-10. The Chemical Team JA (NBCE) is capable of providing the following support:

- NBC tactical operations center, 12-hour shift.
- NBCWRS monitoring.
- NBC monitoring.

CHEMICAL TEAM JB (NBCE)

3-11. The chemical Team JB (NBCE) is capable of providing the following support:

- NBC tactical operations center, 24-hour staffing.
- NBCWRS monitoring.
- NBC monitoring.

ADDITIONAL ARMY UNITS

3-12. In addition to units that specialize in NBC defense, there are other types of units that are capable of making significant contributions to NBC defense operations. Table A-9 provides information and data on the types of units and their general capabilities.

Table A-9. Additional NBC Capabilities

UNIT TYPE	EQUIPMENT	CAPABILITIES
Combat Engineer	Earth Moving: Dump trucks, road graders. Small emplacement excavators. Cranes. Water Purification: 600 gpm pumps. 125 gpm pumps. Water trucks. Water storage tanks.	Providing assistance with terrain decontamination operations (i.e., covering and clearing, as well as decontamination site preparation). Earth hauling/excavation. Providing significant quantities of potable water.
Supply and Transport	Large Volume Water Tankers	Water hauling and pumping.
Technical Escort	Toxicological agent protective (TAP) suits. M18A2 chemical detection kits.	Planning and performing emergency neutralization and subsequent disposal of chemical agents. Response and neutralization of hazards resulting from CAIRA and NAIRA. Escorting hazardous cargo/material.
Explosive Ordnance Disposal	TAP suits. M18A2 chemical detection kits.	Detecting, identifying, rendering safe, evacuating, and disposing of conventional as well as improvised NBC weapons.

SECTION IV – CHEMICAL SPECIAL STAFF RESPONSIBILITIES

Division, brigade and battalion NBC staff responsibilities encompass actions that range from operations and intelligence to logistics and training. The NBC staff accomplishes its key functional responsibilities and supports their unit's planning and preparation to accomplish JMETAL missions in an NBC environment.

DIVISION

4-1. The division NBC section is part of the division special staff section. It is usually under the principal staff supervision of the division operations section. The section helps the commander and staff by providing information, estimates, and recommendations on NBC matters. The members of the NBC section help the principal staff officers prepare plans, orders, and reports. The division NBC officer also recommends, plans, supervises, and coordinates various mission requirements for any organic NBC defense units and nondivisional NBC units assigned, attached, or OPCON to the division.

INTELLIGENCE

- Help the intelligence section analyze and disseminate NBC threat information.
- In coordination with the Air Force staff weather officer, ensure NBC effective and chemical downwind messages (CDMs) are passed to subordinate commands.
- Receive, prepare, and correlate information on enemy NBC attacks.
- Recommend collection tasks for assigned or attached NBC reconnaissance assets.
- Help intelligence section evaluate captured NBC-related foreign material. Recommend urgency of evaluation for further exploitation.
- Ensure countermeasures developed in threat analysis are incorporated into division plans and procedures.
- Provide technical assistance for interrogating EPWs about NBC matters.

PERSONNEL

- In coordination with the personnel section, provide recommendations for assignment of NBC personnel.
- Coordinate professional development of subordinate NBC personnel.
- Monitor use of subordinate unit NBC personnel. Promote integration of non-NBC personnel into NBC activities.
- Actively participate in NBC personnel and unit force structure planning and programming.

TRAINING

- Conduct NBC defense training for personnel throughout the command. Monitor general status of NBC training throughout the command.
- Assist in establishing and reviewing unit-level mission-essential task list. Provide recommendations to ensure higher-headquarters-approved battle tasks can be performed under NBC conditions.
- Promote total involvement of the chain of command in NBC matters.
- Monitor and inspect subordinate command individual and unit NBC proficiency testing.
- Ensure that NBC training is routinely integrated into training events.
- Ensure divisional and subordinate command NBC school programs of instruction are approved and meet minimum standards and requirements.
- Request training support (as required) from HN resources.
- Plan and integrate NBC training to maximize the use of critical NBC collective tasks.
- Determine training needs through staff visits and evaluations and recommend training to correct deficiencies.

EVALUATION

- Use the results of individual training (i.e., common task training), internal and external evaluations, and informal field training exercises (FTXs) to improve NBC readiness.
- Evaluate NBC readiness through maintenance of NBCDE, utilization of personnel, and quality of training provided.
- Provide the divisional training branch with assistance as required for support of unit evaluations.

READINESS

- Receive, collate, and disseminate NBC readiness status as required by senior headquarters.
- Monitor NBC personnel, equipment, and training shortfalls and recommend policies and programs to improve readiness.
- Perodically inspect rotation of shelf-life items, load plans for NBC war reserve stocks, and develop plans and SOPs related to NBC defense.
- Ensure NBC readiness is clearly shown in unit status reports.

LOGISTICS

- Request funding to replace shortages, expendables, and items consumed in training. Monitor equipment status and make requests based on needs of the command.
- Recommend plans and programs for forward-deployed, pre-positioned stocks of NBCDE and decontaminants.

- Help develop and implement policies and plans related to NBC matters.
- Provide through divisional NBC unit assets decontamination planning support for assigned or attached units.

ADMINISTRATION

- Ensure NBC-related publications are maintained and updated.
- Update NBC portions of divisional SOPs.
- Provide guidance on changes in doctrine, equipment authorization, and new items of equipment to be fielded.

FIELD OPERATIONS

- Receive, prepare, correlate, and pass information on enemy NBC attacks as the focal point of the division's NBCWRS.
- Monitor radiation status of subordinate units as required.
- Integrate NBC threat analysis into the IPB process.
- Establish and operate the division NBCC. Coordinate activities and reports.
- Recommend, plan, supervise, and coordinate mission requirements for any organic NBC defense units and other NBC units assigned, attached, or under OPCON of the division.
- Perform vulnerability assessment.
- In coordination with operations personnel, logistics sections, and subordinate commands, allocate NBC equipment and personnel to those subordinate commands.
- Provide NBC estimates and input to combat plans and orders.
- Based upon tactical situations, recommend employment of organic and supporting NBC unit assets.

BRIGADE/REGIMENT

4-2. The MSC (i. e., regiment, brigade) NBC sections consist of the NBC officer and an NBC staff NCO. The MSC NBC officer works as a special staff officer under the staff supervision of the brigade senior staff officer. Through staff visits, coordination, and inspections of subordinate units, the brigade NBC section serves as a focal point for NBC operations. It assists subordinate units in all NBC defense areas to improve NBC readiness.

INTELLIGENCE

- Provide technical assistance to the intelligence section for analysis of the NBC threat and ensure that PIRs and threat information are reflected in unit OPLANs and SOPs.
- Help subordinate units in their threat analysis and evaluate/disseminate key information.
- Integrate NBC reconnaissance assets into unit R&S plans.

PERSONNEL

- Provide recommendations concerning assignment of NBC personnel.
- Help professional development of subordinate unit NBC personnel.
- Ensure proper use of subordinate unit NBC personnel and promote integration of non-NBC personnel into NBC activities.

TRAINING

- Monitor NBC defense training and integration of NBC defense tasks in all aspects of training.
- Determine training needs through staff visits and evaluations. Recommend training required to correct deficiencies.
- Assist in establishing and reviewing unit-level mission-essential task list. Provide recommendations to ensure battle tasks can be performed under NBC conditions.
- Project training ammunition requirements to support NBC defense needs in coordination with training and logistical representatives.
- Provide NBC technical staff help to subordinate units. Explain individual and collective training policies, procedures, and guidance.
- Plan and coordinate NBC training.
- Ensure achievement of at least minimum standards of proficiency by all individuals and units.
- Make maximum use of installation or area NBC defense courses. Ensure quotas are provided to units needing them most.
- Ensure medical training in a contaminated environment is included in exercises.

EVALUATION

- Use results of training and evaluation plan evaluations, unit evaluations, internal and external mission training plan evaluations, and FTXs to improve NBC readiness.
- Evaluate NBC readiness through the maintenance of NBCDE, use of funds, use of personnel, and quality of training provided.
- Monitor and evaluate subordinate unit NBC proficiency.

READINESS

- Help subordinate units determine authorizations and forecast NBC equipment needs to support training and war reserve stockage.
- Assist logistics personnel cross-level NBCDE to obtain the best possible overall readiness posture.
- Inspect rotation of shelf-life items, load plans for NBC war reserve stocks.
- Monitor and recommend input of NBC-related data into unit status reports. Correct deficiencies if possible.

LOGISTICS

- Help logistics and maintenance personnel follow up on outstanding requisitions and NBC equipment maintenance procedures and priorities.
- Conduct spot checks of subordinate unit NBC equipment on hand and on requisition.
- Ensure subordinate units forcast sufficient funds to replace shortages, expendables, and items consumed in training or deployments.
- Help develop plans which provide guidance on the rotation of forward pre-positioned stocks of NBCDE and decontaminates.
- Develop plans for equipping and training mission-essential civilians.

ADMINISTRATION

- Maintain the NBC annex to the brigade SOP.
- Maintain and update NBC-related publications.
- Maintain close contact with subordinate units and higher headquarters. Keep them abreast of NBC activities.

FIELD OPERATIONS

- Receive, prepare, correlate, and disseminate information on enemy NBC attacks.
- Consolidate battalion radiation status. Report to division as required.
- Provide recommendations concerning MOPP levels appropriate for enemy threat and tactical situation.
- Integrate NBC threat analysis into the IPB process.
- Establish and operate the brigade NBC subcollection center. Coordinate activities and reports with appropriate HN territorial organization.
- Perform vulnerability assessment.
- Recommend employment of supporting NBC reconnaissance, smoke, and decontamination assets.
- Report NBCDE and personnel shortfalls to the division NBC section.
- Provide NBC input to plans, orders, and SOPs.
- Plan for the brigade NBC staff personnel to assume the mission of the division NBCC should division NBCC become nonoperational.

BATTALION/SQUADRON

4-3. Battalion/Squadron NBC personnel may consist of the NBC officer, an NBC NCO, and an NBC specialist. (Note: a battalion staff officer can be appointed as an additional duty NBC officer if an NBC specialist is not available.) The battalion NBC section trains personnel and helps plan NBC operations. They also help subordinate unit NBC NCOs. They recommend to the logistics section the use of funds for NBC equipment and supplies. They must periodically report authorizations and on-hand and on-requisition status.

INTELLIGENCE

- Provide technical assistance to the intelligence section for analysis of the NBC threat and ensure the analysis is reflected in unit OPLANs and SOPs.
- Receive, relay, and disseminate information on enemy NBC attacks.
- Ensure that key personnel receive an appropriate, specific NBC threat briefing pertaining to their mission. Also, make sure other newly assigned personnel receive an unclassified NBC threat briefing.

PERSONNEL

- Serve as the professional developer for subordinate NBC NCOs. Provide appropriate military occupational specialty (MOS)-related training for subordinate NBC NCOs and monitor their assignments within the organization.
- Ensure full use of subordinate NBC personnel. Promote integration of subordinate non-NBC personnel into NBC activities.
- Maintain the personnel status of NBC NCOs (arrivals, departures, and projected assignments). Report the personnel status of NBC personnel to the commander and higher headquarters NBC section.
- Provide technical information to help the personnel section prepare casualty forecasts.

TRAINING

- Coordinate and monitor battalion NBC defense training. Ensure the integration of NBC defense training in all aspects of training.
- Assist in establishing and receiving unit-level mission-essential task list. Provide recommendations to ensure battle tasks can be performed under NBC conditions.
- Evaluate individual and collective NBC training. Determine training needs and recommend training required to correct deficiencies.
- Project NBC training ammunition requirements in coordination with training and logistics personnel.
- Train and supervise a crew from battalion to conduct operational decontamination.

EVALUATION

- Evaluate unit's ability to operate under NBC conditions.
- Use the results of unit drills, training and evaluations, and other evaluations to improve NBC readiness..

READINESS

- Monitor NBC equipment status.
- Determine authorizations and forecast NBC equipment needs to support training and basic loads.

- Advise the logistics section on shelf life and rotation of NBC stocks.
- Ensure that all contingency NBC equipment is included in unit load plans.

LOGISTICS

- In coordination with the logistics section, monitor for expenditure of funds provided for NBCDE.
- Monitor outstanding requisitions and NBCDE maintenance.
- Forcast and monitor inventories of NBCDE as required by higher headquarters in coordination with unit NBC NCOs.
- Recommend the use of funds needed to replace shortages, expendables, and items consumed in training based on authorizations contained in appropriate publications.
- Conduct periodic NBC equipment inspections.
- Supervise the NBCDE calibration program. Integrate unit's calibration program with battalion's calibration program.

ADMINISTRATION

- Maintain the NBC annex to the battalion SOP.
- Maintain and update NBC-related publications.
- Maintain close contact with subordinate units and higher headquarters. Keep them abreast of NBC activities.

FIELD OPERATIONS

- Receive, correlate, and disseminate information on NBC attacks.
- Consolidate subordinate unit OEG and radiation status information. Report to higher headquarters as required.
- Perform MOPP analysis.
- Integrate NBC threat analysis into the IPB process.
- Organize and establish (as required) a battalion NBC section. Coordinate and supervise activities of radiological survey and monitoring and NBC detection teams.
- Recommend use of supporting decontamination, NBC reconnaissance, and smoke assets.
- Coordinate decontamination missions conducted with or without support from a decontamination-specific unit.
- Report NBC equipment and personnel shortfalls to higher headquarters.

SECTION V – BATTLEFIELD TASK LIST FOR COMMANDERS AND STAFF

5-1. The following task list (Table A-10) is designed to provide the user of the publication an indication of NBC tasks performed by various commanders and

staff officers. The list is not all-inclusive. Other tasks may be identified for different staff officers and commanders based on the current factors of METT-TC and local SOPs. The level of involvement in each task by the different elements will depend on the stated task.

Table A-10. NBC Tasks

TASK	Commander	Personnel Officer	Intelligence Officer	Operations Officer	Logistics Officer	Civil Operations Officer	Other Special Staff Sections
1. Identify, apply, or recommend collateral damage and individual safety constraints.	X		X	X		X	FSE and NBC
2. Identify items to be included in the commander's NBC guidance.	X	X	X	X	X	X	FSE, NBC, and Staff Judge Advocate
3. Predict fallout and downwind vapor hazards and their probable effects on operations.							NBC
4. Maintain and report cumulative radiation dose status.		X		X			Surgeon (SURG) & NBC
5. Recommend OEG and MOPP.		X					SURG & NBC
6. Maintain discipline, law, and order. The fragmentation of units and C^2 elements creates large numbers of stragglers.		X					SECURITY
7. Establish straggler-control points.		X					SECURITY
8. Supervise the preparation of area damage control plans.				X	X		Engineer (ENGR) & Rear Area Damage Control Officer (RADCO)
9. Maintain installation force protection plan.				X			NBC
10. Advise on the collateral impact of our use of nuclear weapons.			X	X			FSE& NBC
11. Advise on the impact of enemy's use of NBC weapons on the civilian population.			X			X	NBC

12. Develop population center overlays used to minimize/preclude damage to population centers.						X	FSE
13. Develop a radiological and chemical monitoring and survey plan.			X				NBC
14. Determine the effects of a unit's radiation exposure status on mission assignments.		X		X			SURG & NBC

Table A-10. NBC Tasks (Continued)

TASK	Commander	Personnel Officer	Intelligence Officer	Operations Officer	Logistics Officer	Civil Operations Officer	Other Special Staff Sections
15. Have responsibility for resupply of chemical protective clothing.					X		
16. Develop plans for handling mass casualties (such as medical evacuation, graves registration/hasty burials) and relacements.		X			X	X	SURG & Chaplain
17. Prepare area damage control plans.				X	X		Base Cluster, RADCO & ENGR
18. Develop a target engagement priority list based on commander's guidance.			X	X			FSE & NBC
19. Establish procedures for rapid fire support planning/execution within target nominal dwell times.			X	X			FSE
20. Conduct NBC vulnerability analysis.			X	X			FSE & NBC
21. Disseminate the Strike Warning (STRIKEWARN) message and NBC 3 nuclear message.				X			NBC
22. Integrate NBC reconnaissance support into the maneuver plan.	X			X			NBC
23. Apply the appropriate fire techniques/procedures that facilitate the integration of obscurants into conventional fire support plan.							FSE, NBC
24. Determine OPSEC requirements.		X	X				Signal (SIG)

25. Task-organize and employ intelligence-gathering assets for timley engagement of targets.			X				FSE
26. Task appropriate agencies for poststrike analysis.			X	X			FSE
27. Prepare OPLANs that support battle space operations.	X	X	X	X	X	X	FSE, NBC & ENGR
28. Modify the administration and logistical plan based on the operational situation.		X			X	X	
29. Determine the effects of enemy use of NBC weapons on OPLANs.	X	X	X	X	X	X	FSE & NBC

Table A-10. NBC Tasks (Continued)

TASK	Commander	Personnel Officer	Intelligence Officer	Operations Officer	Logistics Officer	Civil Operations Officer	Other Special Staff Sections
30. Modify the tactical plan based on the operational situation.	X	X	X	X	X	X	ALL
31. Plan and recommend requirements for NBC units and their employment.							NBC
32. Prepare the smoke/NBC annex to plans and orders, NBC estimates, and SOPs.							NBC
33. Plan effective wind message preparation and distribution.			X				NBC
34. Collate, evaluate, and distribute NBC contamination data and maintain the NBC situation map.							NBC
35. Advise on the impact of NBC contamination on tactical, logistical, and civil-military operations.				X	X	X	NBC
36. Advise on NBC intelligence matters and countermeasures (for example, smoke).			X				NBC
37. Advise on the use of RCAs and herbicides in support of tactical operations.							NBC, Security
38. Support verifying enemy first-use of CB warfare.			X			X	SURG & NBC

39. Advise on clearing obstacles and hazards created by enemy NBC employment.							ENGR & NBC
40. Construct NBC shelters and use earth-moving equipment in NBC decontamination operations.							ENGR & NBC
41. Locate uncontaminated water supplies							Quarter-master (QM) & NBC
42. Maintain control on MSRs.					X		Security

Table A-10. NBC Tasks (Continued)

TASK	Commander	Personnel Officer	Intelligence Officer	Operations Officer	Logistics Officer	Civil Operations Officer	Other Special Staff Sections
43. Advise the commander on protective measures against EMP effects on communications–electronics (CE) equipment.							SIG & NBC
44. Plan for the use of helicopters for aerial radiation surveys, damage assessments, and biosurveillance.				X	X		NBC & FSE
45. Plan for, respond to, and supervise unit response to NBC attack or hazard.	X	X	X	X	X	X	NBC
46. Plan and supervise the use and maintaining of protective equipment (for example, clothing and mask; decontamination equipment; detectors, alarms, and sampling equipment; and smoke equipment).	X	X	X	X	X	X	NBC
47. Plan for the use and maintenance of CP equipment.	X			X	X		NBC
48. Plan and supervise NBC detection, identification, and marking operations; supervise crossing of contaminated areas; and estimate and calculate NBC hazards.							NBC

49. Advise commander and staff on current NBC situations and threat; assess unit status; assess personnel hazards; prepare, calculate, and disseminate NBC reports/STRIKEWARN.			X	X			FSE & NBC
50. Plan, coordinate, supervise, conduct, and control NBC recon, NBCC, decontamination, smoke unit operations, and WMD accidents/incidents.	X		X	X			NBC
51. Analyze effects of weather and terrain on NBC and smoke operations.			X				NBC
52. Coordinate HN NBC defense and smoke support.						X	NBC

Table A-10. NBC Tasks (Continued)

TASK	Commander	Personnel Officer	Intelligence Officer	Operations Officer	Logistics Officer	Civil Operations Officer	Other Special Staff Sections
53. Plan intergration and employment of flame operations.				X			NBC & ENGR
54. Conduct missions and supervise operations under NBC conditions.	X	X	X	X	X	X	NBC
55. Describe and estimate effects of smoke and NBC operations on unit's mission.	X	X	X	X	X	X	NBC
56. Describe, plan, and identify needed radiation safety, surety, and hazardous material needs.							NBC

Appendix B

USN NBC CAPABILITIES

The USN must be prepared to conduct prompt, sustained, and decisive combat operations in NBC environments. An adversary's NBC capabilities can have a profound impact on US and multinational objectives, campaign plans, and supporting actions, and therefore must be taken into account in operational and tactical planning.

ORGANIZATION AFLOAT

1-1. The shipboard organization for NBC defense provides a self-contained organization that should be capable of accomplishing the following essential tactical operations:

- Intelligence gathering and analysis.
- Detection and identification of NBC contamination (including stand-off, point, and portable NBC detection systems).
- Reporting of attacks and warning of NBC hazards.
- Individual protection and CP (various ship classes have varying CP systems and protected spaces).
- Decontamination of personnel and equipment (to include countermeasure washdown system).
- Medical treatment and first aid.

COMMANDING OFFICER (CO) RESPONSBILITIES

1-2. Responsibility for the NBC readiness of a ships rests with the CO. The CO is ultimately responsible for the training and continual exercising of all aspects of personnel survivability and should be aware of the adequacy and operability of all NBC survivability systems and equipment aboard ship. Specific responsibilities can include the following:

- Establish maximum permissible exposure limits for radiological contamination.
- Maneuver the ship to minimize effects of NBC hazard.

EXECUTIVE OFFICER RESPONSIBILITIES

1-3. The executive officer is the primary assistant to the CO and is also responsible for the NBC readiness of the ship. Specific responsibilities can include the following:

- Assist the CO and advise on the ship's NBC survivability readiness.

- Direct and coordinate the exercise and training of ship's personnel in NBC procedures, including control and recovery of the ship from damage and the management of casualties.
- Supervise all damage control and maintain overall supervision of all necessary actions prior to attack for survival of the ship and crew.

OFFICER OF THE DECK RESPONSIBILITIES

1-4. The officer of the deck's responsibilities include primary assistance to the CO on the bridge. Other responsibilities can include the following:

- Be familiar with the ship, its material condition, and established procedures for emergencies including NBC readiness actions.
- Be prepared to analyze a situation and take prompt, positive, and correct actions.
- Be prepared to maneuver the ship for contamination avoidance in the absence of the CO.

OPERATIONS OFFICER RESPONSIBILITIES

1-5. The responsibilities of the operations officer are to act as the principal advisor to the CO regarding potential or actual NBC hazards, using intelligence reports as the primary source of the threat. Additionally, the operations officer/department performs the following additional tasks:

- Collect and properly disseminate intelligence reports concerning the possibility and method of NBC attacks.
- Maintain plots of predicted and actual NBC hazard areas and recommend changes to avoid actual hazard.
- Train combat information center personnel in preparing an NBC hazard area plot.
- Prepare appropriate reports for transmission as directed by the CO.
- Route the appropriate data to the DCA from incoming message traffic to allow preparatory measures to be taken.
- Secure electronic equipment to mitigate effects of EMP.

NAVIGATOR RESPONSIBILITIES

1-6. The primary responsibilities of the navigator are to qualify all quartermasters standing bridge watches in the use of radiological survey instruments. He also ensures that background radiation readings are taken at specified intervals and logged by time, latitude, and longitude.

ENGINEER DAMAGE CONTROL OFFICER (DCO) RESPONSIBILITIES

1-7. The DCO supervises and directs the DCA in establishing an NBC organization. He secures evaporators and applicable sea suction following an underwater nuclear explosion. The DCO monitors seawater systems for radiation hazards, instructs engineering personnel on the procedures to use appropriate protective equipment while operating machinery. He considers main propulsion requirements and demands for auxiliary services, designates

undamaged engineering spaces which are least contaminated as vital control areas, directs the decontamination and repair of affected spaces, distributes and tracks IPE, ensures NBC detectors are maintained and operational, and ensures CP systems (if equipped) are maintained.

MEDICAL DEPARTMENT REPRESENTATIVE RESPONSIBILITIES

1-8. The primary responsibilities of the medical representative are to treat casualties; organize battle dressing station personnel; furnish medical supplies to first aid boxes and battle dressing stations; conduct shipwide training in self-aid, first aid, medical aspects, and treatment; and organize and maintain a walking blood bank. The medical representative provides information to the commander on possible exposure of personnel to biological agents and assists the DCA in recommending decontamination of CB agents. He instructs the ship's personnel in radiation and CW/BW hazards, including maintenance of the radiation exposure log. He inspects food and water supplies following an attack and immediately reports any unusual disease/infection. He also distributes NBC antidotes in coordination with the DCA.

NAVAL COASTAL WARFARE

1.9. A primary naval coastal warfare (NCW) responsibility is to protect strategic shipping and naval vessels operating within the inshore/coastal area, anchorages, and harbors from bare beach to sophisticated port facilities to ensure uninterrupted flow of strategic cargo and units to the combatant commander. Harbor defense is a resource-intensive operation that requires a sustained presence and includes key functions such as port security and force protection.

1-10. NCW is the responsibility of the unified or subunified commander or JFC. This responsibility is exercised through the maritime component commander as the NCWC. Command relationships and need for a designated harbor defense commander (HDC) in the AO will be designated by the MCC/NCWC.

1-11. The NCWC may form a port security and harbor defense group (PSHDGRU) to support defense efforts and protect shore facilities. Shore facilities include fixed, shore-based infrastructure supporting the ship-to-shore movement of commercial or military materiel. The HDC sets the boundaries for harbor defense for the PSHDGRU. Defense of the harbor is the responsibility of the HDC and inland defense is the responsibility of the appropriate area or component commander designated by the JFC. Close coordination on mission priorities must be accomplished for NCW units between the NCWC and base commander to avoid conflicts. Further, during expeditionary NCW operations, close coordination between NCWC and HDC with the JRAC, if assigned, and the Military Traffic Management Command DOD single port manager is key to mission success and improved force protection (see JP 401.5, *Joint Tactics, Techniques, and Procedures for Water Terminal Operations*, for more detailed information on the DOD single port manager concept).

1-12. On a larger scale, under the direction of the NCWC, The PSHDGRU may have OPCON of forces providing port security and harbor defense in more than one port and/or harbor. This may be particularly true along a coastline that has multiple ports in geographic proximity to each other. In this situation, the

multiple ports may be designated a base cluster. The PSHDGRU will, through the NCWC, coordinate security operations with the appropriate area or functional commander. The PSHDGRU may possess some or all of the following capabilities:

- Mobile inshore undersea warfare unit—surveillance and detection that includes surface and subsurface sonobuoy and naval communications capability.
- Naval EOD detachment—capabilities include special weapons handling and evaluation.
- Port security unit—provided by the US Coast Guard and is integrated into the Navy component in wartime or as allowed by law. The mission of the port security unit is to conduct outside the CONUS port security and/or harbor rear area operations in support of requesting combatant commanders.

SUBORDINATE NCWC

1-13. Within the NCW organization, OPCON of any supporting element may be assigned to the appropriate supporting echelon commander as deemed necessary by the MCC/NCWC. Commanders of subordinate forces assigned to NCWC for the conduct of various missions may also support force protection requirements (as assigned or required) for harbor defense. Individual harbor defense/port security forces provide forces to the JRAC or other appropriate commander to provide for protection of forces. Normally, harbor defense command forces will complement personnel form collocated forces or forces specifically assigned as protection units for landward security (e.g., USMC fleet antiterrorism security team, USA military police company). See JP 3-10.1 for a more detailed discussion of rear area security.

SUPPORTING COMMANDERS

1-14. Support forces may also be assigned to the NCWC for support of harbor defense. Commanders of forces so assigned will report OPCON or TACON to the NCWC for proper performance of their assigned mission.

1-15. The USN does not operate with specialized NBC defense units. Personnel required to function in this area are drawn from existing job specialties. Naval units will generally posses only enough NBC equipment and consumables for their own support. The Navy addresses NBC defense in two primary areas: units afloat and units ashore. Shipboard units have repair parties and teams capable of conducting limited NBC detection, decontamination, and contamination control operations onboard their assigned vessel. Shore-based units have disaster preparedness (DP) teams capable of providing more comprehensive assistance in the form of organized and equipped teams.

2-1. Tables B-1 through B-7 depict items of NBCDE used to support naval operations.

Table B-1. NBC Protective Equipment (USN)—Afloat Personnel

NBC PROTECTIVE EQUIPMENT—AFLOAT PERSONNEL

Equipment	Description
Chemical Protective Ensemble (CPE)	The CPE consists of: Chemical Protective Overgarment (CPO). Chemical Protective Footwear Covers. Chemical Protective Glove Set.
MCU-2A/P Protective Mask; M-40 Protective Mask, M-45 Protective Mask, MCU-2/P Protective Mask	These protective masks generally consist of: Facepiece assembly. Drinking tube system. Canister(s). Mask carrier.
Chemical Protective Overgarment	The CPO consists of two parts: Smock. Trousers.
Chemical Protective Glove Set	The chemical protective glove set consists of an outer- and inner-glove layer system.
Wet Weather Clothing Set	Primarily for personnel protection; however, provides extra protection in an NBC-hazardous environment.
Medical Items Kit	Contains nerve agent antidotes (atropine, 2-PAM Cl) and nerve agent pretreatment Pyridostigmine Bromine.
Aircrew Protective Clothing/Equipment	Consists of: Respiratory assembly composed of the MCK-3A/P mask with hood. Helmet assembly for use with the MCK-3A/P mask. White cotton undershirt/drawers. Plastic disposable footwear covers. Plastic disposable cape. Chemical protective gloves and white cotton inserts. Chemical protective socks. CMU-23A/P survival vest.
AN/KAS-1A Chemical Warfare Directional Detector	Shipboard mounted or portable unit that performs passive infrared imaging detection to remotely identify nerve agent clouds. Consists of a sensor unit, pivot mount, power conversion unit, stowage case, maintenance kit, overboard lanyard, and foul-weather cover.

1

2

Table B-2. Afloat NBC Detection Equipment (USN)— Chemical

AFLOAT NBC DETECTION EQUIPMENT—CHEMICAL	
Equipment	**Description**
Chemical Agent Point Detection System (CAPDS)/Improved Point Detection System (IPDS).	The CAPDS is a hard-installed, continuously operating device that samples the ambient outside air and sounds an alarm when chemical nerve agents (vapors) are detected. Consists of two sensor units, one on either side of the ship. Detects only nerve agents. Being replaced by IPDS. The IPDS is a fixed-point detection system for chemical nerve and blister agent vapor hazards.
M256A1 Chemical Agent Detector Kit	Portable, disposable kit that can detect and identify nerve, blister, or blood agents. Consists of twelve individually packaged sampler/detectors, instruction cards, and a packet of M8 paper.
M8 Chemical Agent Detector Paper.	Chemically treated, dye-impregnated paper, perforated for easy use, issued in a book of 25 sheets with color comparision chart on the inside front cover. Capable of detecting and identiying non-persistant (G) nerve agent, vesicants (H), and persistant (V) nerve agents.
M9 Chemical Agent Detector Paper.	Chemically treated , dye-impregnated paper, adhesive backed paper, issued in thirty foot roll inside a cardboard box with a metal cutter.
Civil Defense Draeger Tubes	Test equipment consists of a handheld bellows pump and hermetically sealed detector tubes containing silica gel mixed with reagent designed for specific gases. Used to test for gases including phosgene.
CAM and Improved CAM	Battery-operated, man-portable monitoring system designed to detect nerve and blister agent vapors down to the lowest concentrations which affect personnel over a short period of time.
Shipboard Automatic Chemical Agent Detection and Alarm (ACADA).	Shipboard alarm used to detect select CW agents.

Table B-3. Afloat NBC Detection Equipment—Biological

AFLOAT NBC DETECTION EQUIPMENT—BIOLOGICAL	
Detector System, Biological Agent: Joint Portal Shield, M99/Interim Biological Agent Detection System (IBADS)	M99 detects and presumptively identifies target biological agents. Provides communication equipment to alert the command post computer operator or headquarters. Provides a method to collect agent samples for laboratory confirmation analysis. The IBADS is a point detector used to monitor, detect, collect, and presumptively identify BW agents.

1
2

Table B-4. Afloat NBC Detection Equipment—Radiological

AFLOAT NBC DETECTION EQUIPMENT—RADIOLOGICAL	
Equipment	**Description**
AN/PDR- 27 Radiation Detection, Identification, and Computation (RADIAC) Set	Portable, battery-operated, Geiger-Mueller type RADIAC instrument measuring 8”x13”x10” which serves as the Navy standard low-range beta/gamma survey instrument. Comes with two probes and measures gamma on four scales, 0-0.5, 0-5, 0-50, and 0-500 milliroentgens/hour.
AN/PDR- 43 RADIAC Set	A pulsed (time-controlled) end window Geiger-Mueller type RADIAC instrument which serves as the Navy standard high-range beta/gamma survey instrument. Measures gamma on four scales, 0-0.5, 0-5, 0-50, and 0-500 roentgens/hour and detects beta.
AN/PDR- 56 RADIAC Set	A portable scintillation type instrument used for detection of alpha contamination. The RADIAC indicates on a meter the rates per minute of alpha radiation in proportion to number of alpha particles adhering to the equipment probe.
AN/PDR- 65 and AN/PDR- 65A RADIAC Set	Navy standard fixed instrument for measuring gamma radiation intensity and providing dose information. Meaures gamma intensities to 10,000 centigrey per hour; records cumulative dose to 9-999 rads.
AN/VDR2 RADIAC Set	Digital, auto-ranging dose rate meter and dosimeter providing detection and measurement of gamma and beta radiation. Major components are the RADIAC meter, probe, pouch with strap, and converter receptacle.
DT-60C/PD Personnel Dosimeter	High-range, non-self-reading dosimeter which consists of a special phosphate glass housed in a moisture-proof bakelite case measuring 1.5 inches in diameter, designed to be worn around the neck.
CP-95A/PD Dosimeter Reader	Designed to read the DT-60 personnel dosimeter. Will operate satisfactory over a range of 0-200 roentgens in 10-roetgen steps, with 0 – 1000 roentgens in 20-roentgens steps, with each 100 roentgens a major subdivision.
IM-143B/PD Pocket Dosimeter	A pen-like, self-reading pocket dosimeter designed to read gamma radiation exposure in the 0–600 roentgen range. Must be charged and zeroed prior to use with the PP-4276 detector charger.
AN/PDR-75 RADIAC Set (Wristwatch and Computer Indicator)	Two-part set, composed of the DT-236/PDR-75 individual wristwatch dosimeter for detection and the CP-696/PDR-75 computer indicator. Reading device for measuring individual exposure of accumulated neutron induced and gamma radiation.

3

Table B-5. Afloat NBC Decontamination Equipment—Chemical

AFLOAT NBC DECONTAMINATION EQUIPMENT—CHEMICAL	
M291 Individual Skin Decontamination Kit	Used to remove contamination from exposed skin and equipment.
Firehoses	Used to support removal of contamination.
M295 Decontamination Kit, Individual Equipment	Decontamination kit for larger items of personal equipment than the M291 can accommodate. Nontoxic.
Countermeasure Washdown System	Used to support removal of external shipboard contamination.
High-Test Hypochlorite	Decontaminant for chemical agents.
Personnel Decontamination Station	Used for shipboard decontamination of personnel.
ASHORE DECONTAMINATION EQUIPMENT—DECONTAMINANTS	
Equipment	**Description**
M258A1 Skin Decontamination Kit	The M258A1 Skin Decontamination Kit is designd to remove and neutralize nerve and blister agents on the skin and selected small equipment such as masks, gloves, and personal weapons.

Table B-6. Ashore NBC Detection Equipment—CP Systems

ASHORE NBC DETECTION EQUIPMENT—CP SYSTEMS	
Equipment	**Description**
M20 Simplified Collective Protection Equipment (SCPE)	Lightweight, mobile, overpressure system which provides a clean-air shelter from CB warfare agents and radioactive particles.
M28 SCPE	Designed to provide protection from CW/BW agents for C^2, rest and relief activities.

Table B-7. Ashore NBC Decontamination Equipment/Decontaminants

ASHORE NBC DECONTAMINATION EQUIPMENT/DECONTAMINANTS	
Equipment	**Description**
M291 Individual Skin Decontamination Kit	Consists of a wallet-like carrying pouch containing six packets of decontamination powder. Used to remove contamination from exposed skin and equipment.
M295 Decontamination Kit, Individual Equipment	Decontamination kit for larger items of personal equipment than the M291 can accommodate.Non-toxic.
ABC-M11 Decontaminating Apparatus	A fire-extinguisher-like device used to spray decontaminant. Refillable and charged by nitrogen cylinders.
M12 Decontaminating Apparatus	Power-driven, skid–mounted, 500-gal capacity decontaminating apparatus used to mix and spray decontaminant solutions.

Table B-7. Ashore NBC Decontamination Equipment/Decontaminants (Continued)

M13 Decontaminating Apparatus, Portable (DAP)	A self-contained device used to apply decontaminant to metal surfaces with a 14-liter disposable container.
M17 Decontamination Apparatus	Power-driven, portable, lightweight decontaminating system designed to draw water from any source and deliver it at high pressure and temperatures.
High Test Hypochlorite	Liquid ashore/shipboard decontaminant for CW agents.
Supertropical Bleach (STB)	Highly chlorinated, powdered decontaminating agent used primarily by ground forces and shore facilities.
Detergent, General Purpose Liquid	Mixed with calcium hypochlorite to assure complete wetting of surfaces.
Detergent, Wetting Agent	Mixed with hypochlorite to assure complete wetting of surfaces.
DS-2 Decontamination Solution	DS-2 is a liquid decontaminant used against all known CB agents (except bacterial spores).

Appendix C

USMC NBC CAPABILITIES

The USMC must be prepared to conduct prompt, sustained, and decisive combat operations in an NBC environment. An adversary's NBC capabilities can have a profound impact on US and multinational objectives, campaign plans, and supporting actions, and therefore must be taken into account in operational and tactical planning.

SECTION I – USMC (ORGANIZATION)

Section I addresses USMC NBC defense capabilities. Specifically, the discussion addresses the Marine Air Ground Task Force (MAGTF) and its ground and air combat element's NBC defense capabilities. NBC infrastructure and NBC unit functions and responsibilities are also addressed.

MARINE AIR GROUND TASK FORCE

1-1. Both the size and composition of an MAGTF and an NBC unit depend on factors such as METT-TC. To conduct effective NBC defense, the force requires a clear understanding of the mission, command relationships, and available resources. Since the USMC has a limited number of MOS-qualified NBC specialists, these specialists are placed where they will have the greatest impact on overall mission accomplishment. This means that positions on most NBC teams will not be filled with NBC specialists. Therefore, the success of an NBC team relies on the competency of the individual marine. Individual marines must hone their individual NBC skills and their understanding of NBC defense operations. Their responses to NBC defense operations must become conditioned responses. Based on this information, the MAGTF commander considers the following while forming the MAGTF's NBC defense:

- All NBC personnel and equipment organic to the units assigned to, or under OPCON of, the MAGTF.
- Additional NBC equipment and personnel available from senior agencies (e.g., JTF).
- The MAGTF's command and support relationships.
- The availability of NBC specialists. NBC specialist billets are incorporated into the Marine Corps Table of Organization (T/O) (listed as NBC NCOs) at all levels of the command down to the battalion level.

ECHELONS OF COMMAND

1-2. All echelons of command must supervise and reinforce the NBC defense efforts of subordinate elements. Each commander in an MAGTF must prepare and implement NBC defense measures while also ensuring that their subordinates can operate in a NBC environment. To provide adequate defense, the MAGTF commander organizes NBC defense assets. Units at all levels must be capable of performing the following essential operations:

- Detecting and identifying NBC agents and materials.
- Warning and reporting of NBC attacks and hazards.
- Performing individual and collective protection measures.
- Decontaminating personnel, equipment, and terrain as required.
- Administering first aid and following unit medical operations and exposure guidance. Regardless of the unit's size or mission, principles essential to NBC defense remain constant; only the scope will vary.

PRINCIPLES

1-3. The following principles help to determine the structure of effective NBC teams and units:

- The lowest level of organization required to function as an independent unit must possess the capability to survive and accomplish specialized tasks in an NBC environment.
- Higher units or formations must also be capable of accomplishing their own mission as well as supporting subordinate units if required.
- Specific personnel must be designated and trained for specific NBC defense responsibilities.

NBC TEAMS

1-4. NBC teams and units are structured to support subordinate commanders as much as possible while drawing as little as possible from the supported commanders' assets. For example, a battalion headquarters maintains some level of NBC decontamination capability. This may be in the form of personnel support or equipment support.

1-5. A battalion commander can reinforce the decontamination efforts of one subordinate commander by dispatching part of the headquarters and service (H&S) company decontamination team or equipment assets rather than using the decontamination team(s) of another line company unit. If a line company commander loses the assigned decontamination team, the commander loses the only personnel used to perform primary NBC duties and capabilities (immediate decontamination).

1-6. The framework for effective NBC defense operations is in place once the MAGTF is fully deployed. Additional NBC defense organizations can be created using appropriate command and support relationships. The creation of additional NBC defense organizations should not change the defense mission of NBC organizations already in existence.

CONTROL CENTERS

1-7. The NBCC (see Figure C-1) forms the hub for all NBC defense operations. The control center monitors and coordinates all NBC defense operations. It is also responsible for collecting, collating, analyzing, and disseminating all NBC-related information. NBC information may come from many different agencies or units. As a general rule, NBC information gathering focuses on early warning of NBC attacks, locations of contaminated areas, decontamination sites, and routes from contaminated areas to decontamination sites.

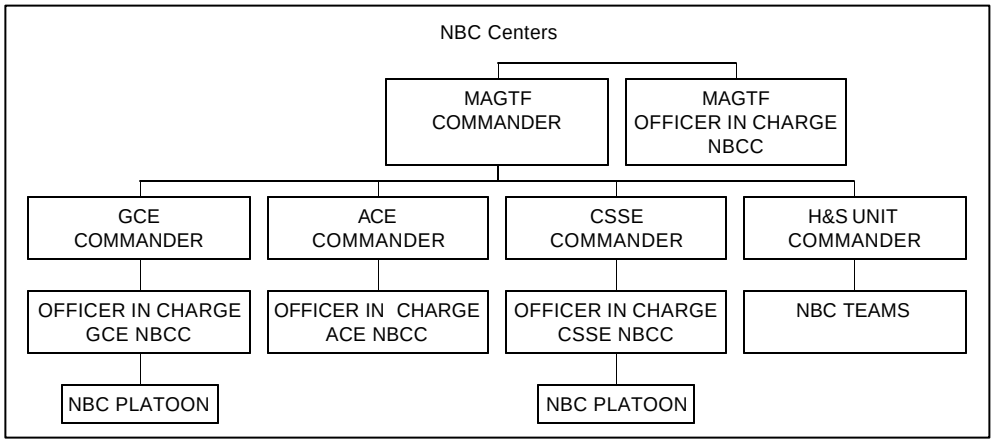


Figure C-1. NBC Centers

COMMAND ELEMENT

1-8. The command element coordinates reconnaissance/survey operations, coordinates surveillance/monitoring operations, and coordinates and monitors decontamination operations. It maintains close coordination with all intelligence assets in order to exchange NBC reconnaissance/survey intelligence. The command element is also responsible for collecting, collating, analyzing, and disseminating surveillance/monitoring information.

1-9. Many different units on the battlefield will be in a position to report NBC activity; therefore, the command element must be prepared to establish an NBCC that is capable of continuous operations. An NBCC cannot be established with only the NBC officer and NBC specialists assigned to the command element. Augmentation is required. Units that are not committed may provide additional NBC personnel to the command element in order to augment the NBCC.

GROUND COMBAT ELEMENT (GCE)

1-10. The GCE company and battalion teams organize as elements of their respective units. Since the threat of an NBC attack is equal to all ground combat units, the GCE commander normally leaves all NBC assets with the parent organization. The division NBC platoon is placed either in a general or DS role based on the NBC threat and the ability to facilitate future operations. If augmentation is required, the officer in charge of the GCE NBCC coordinates

with the officer in charge of the higher headquarters NBCC. Augmentation provided is based on assets available and operational priorities.

MARINE DIVISION

1-11. The division operations section contains the NBC section. Personnel required to staff an NBCC are drawn from this section. In addition to performing control center functions at the division level, NBC personnel supervise overall NBC operations. Although limited in its capability, this section also can perform NBC reconnaissance. The division NBC section also provides the nucleus for a reinforced NBC platoon. This unit, with personnel from division elements, combat engineers, and motor transport augmentation, forms an NBC defense organization that can support a division's decontamination operations and support NBC readiness of the MAGTF's GCE. A further combination of personnel and equipment from the combat engineer battalion, hygiene equipment section, and the division NBC platoon creates a provisional unit that possesses increased decontamination capabilities. If required, this provisional unit is task-organized to provide support to the GCE.

MARINE REGIMENT

1-12. The regiment's NBC defense needs are met with as little rearrangement of existing personnel and equipment as possible. The regimental commander assigns the NBC officer as the officer in charge and task-organizes organic assets. If additional assistance is required, the regimental commander requests reinforcement from higher headquarters.

NBC Officer and NBC NCO

1-13. Infantry and artillery regiments are staffed with an NBC officer to assist the commander and the staff in NBC defense operations. An NBC specialist is assigned to assist the NBC officer. Other NCOs may be assigned the responsibilities of NBC NCOs as additional duties.

NBC Section

1-14. Infantry regiments have assigned NBC specialists by T/O. The composition and duties of the NBCC team parallel those of the battalion NBC organization discussed below. However, the information processed at this level is more voluminous and broader in scope.

Decontamination Capability

1-15. The regiment does not maintain a standing decontamination team. NBC personnel of the regiment coordinate and supervise the decontamination efforts within the regiment. The operational decontamination of regimental headquarters is performed by the regimental headquarters company decontamination team or other designated personnel.

MARINE BATTALION

1-16. A unit's NBC defense needs are met with as little rearrangement of existing personnel and equipment as possible. Consolidation of NBC defense assets under the cognizance of the battalion NBC officer is neither the

recommended nor the preferred method of supporting the battalion's NBC defense requirements. The battalion NBC officer advises the commander and coordinates the efforts, but the battalion NBC officer does not exercise command authority.

1-17. Battalions are authorized an NBC specialist (MOS 5711) by T/O, and, in some cases, they are authorized an NBC officer. These personnel are assigned to the S-3 section. If an NBC officer is not available to occupy these T/O billets, an officer is assigned the duties of NBC officer as an additional duty.

1-18. The GCE NBCC collects, evaluates, collates, and disseminates information concerning friendly and enemy NBC operations to the commander, his staff, higher headquarters, subordinate units, and supporting units. Specifically, the GCE NBCC plans the employment of NBC detectors and sensors, disseminates tasks of the monitor/survey teams, disseminates overall unit NBC defense guidance, coordinates troop safety considerations when friendly NBC operations are planned, performs the computations needed to convert basic NBC information into the required form, plots and displays NBC information, and evaluates and disseminates NBC information.

1-19. Each battalion commander organizes and trains a GCE NBCC team. The GCE NBCC is normally located within the combat operations center. This facilitates close coordination with the operations section, intelligence section, and the fire support coordination center.

1-20. Commanders and their staffs use the information collected and processed by the GCE NBCC team to assist them in their decision-making process. This information influences the tactical employment of monitor/survey teams and the conduct of operations based on the existing level of contamination.

1-21. Generally, a battalion does not maintain a standing decontamination team. Immediate decontamination is normally performed by company decontamination teams, although decontamination efforts can be a coordinated effort that uses battalion headquarters and company equipment assets and teams. As the need for decontamination operations increases, the battalion NBC officer's mission is to coordinate the support requirements of subordinate commanders and enhance their ability to perform their mission. Battalion NBC SOPs structure the NBC defense organization to reinforce subordinate unit capabilities and to avoid stripping them of their ability to perform decontamination operations. The battalion NBC officer coordinates the employment of CSS NBC personnel when reinforcing subordinate unit decontamination operations.

1-22. To meet the battalion's surveillance requirements, the battalion commander normally tasks subordinate unit monitor/survey teams with surveillance and monitoring responsibilities. If this is impractical, part or all of the company monitor/survey teams may be consolidated, and the battalion NBC officer is placed in charge of the teams. Consolidation of NBC assets is the exception rather than the rule for meeting the needs of battalion NBC defense. Only under extreme circumstances should consolidation of assets be considered. Senior commanders can also assign NBC teams to, or place NBC teams in support of, the battalion commander.

MARINE COMPANIES

1-23. Company commanders organize and train NBC defense team(s) and other NBC personnel according to unit SOPs and directives issued from higher headquarters. During actual NBC operations, NBC-trained personnel can be assigned to full-time NBC defense duties. A generic organization consists of several monitor/survey teams and a decontamination team.

1-24. Companies have chemical agent detector kits, radiological detection equipment, and other protective and decontamination material listed in their tables of equipment (T/Es).

1-25. During NBC operations, sentries and guards have the additional duties of initiating the chemical attack alarm and participating in other chemical defense activities. Each sentry must know how to sound the alarm to alert unit personnel to a chemical, biological, or radiological hazard.

1-26. The company-level NBC defense team consists of organic personnel assigned the additional duty of NBC defense. Higher headquarters SOPs dictate the team's exact composition. Generally, a company NBC defense team consists of the NBC officer who supervises NBC defense activities, the NBC NCO who assists the NBC officer,; personnel trained to decontaminate unit equipment and supplies, monitors or operators trained to use RADIAC meters and chemical detection kits as rated by unit T/Es, and ground survey parties for survey meters authorized by T/Es. At a minimum, the survey party consists of qualified ground surveyors, drivers, radio operators, and security personnel as required.

1-27. The company NBC defense team(s) must be able to conduct NBC reconnaissance; recognize NBC attacks and understand unit procedures to implement warnings; detect chemical, biological, and radiological hazards; operate and perform operator's maintenance on NBC detection and sampling equipment; conduct NBC sampling surveys; collect samples of suspected contamination and forward to higher headquarters; mark contaminated areas, equipment, and supplies with standard marking signs; provide data for compilation of NBC reports; perform monitor/survey functions; operate and perform operator's maintenance on NBC monitoring equipment; conduct NBC monitoring operations; monitor effectiveness of decontamination measures; provide data for completion of NBC reports; and perform decontamination.

AIR COMBAT ELEMENT (ACE)

1-28. The current structure of the marine aircraft wing (MAW) includes all the NBC officers and specialists required to sustain foreseeable NBC defense operations. Additional support is requested through the command element NBCC.

MAW HEADQUARTERS

1-29. The MAW G-3 section contains the NBC personnel required to staff an ACE NBCC. This center is normally located in the tactical air command center. These personnel perform overall NBC defense planning, organization, and readiness for their units. The MAW does not have a specialized NBC unit at the headquarters level. However, the organization of NBC specialists and the NBC

tasks assigned to various units ensure there is a coordinated effort to accomplish all NBC defense missions.

THE MARINE AIRCRAFT GROUP (MAG) HEADQUARTERS

1-30. The MAG headquarters consists of one NBC officer and several NBC specialists. The MAG headquarters is the lowest MAW level with an NBC specialist (with the exception of the marine wing support squadron (MWSS)). When attached to subordinate units, MAG NBC personnel provide guidance on NBC matters and coordinate with the MWSS concerning all aspects of operational decontamination, contamination control, and NBC reconnaissance.

MARINE SQUADRON/BATTALION

1-31. NBC defense specialists are normally consolidated at the MAG level (except for the MWSS). This allows for centralized control of the maintenance of equipment, NBC warning and reporting, and NBC training. Although NBC specialists are not located at all levels, all squadrons are still required to maintain individual and unit NBCDE. This includes maintenance, calibration, distribution, and requisitioning of equipment.

1-32. Although MAW squadrons and battalions are not required to establish an ACE NBCC team, they must be prepared to submit NBC reports to higher headquarters. Therefore, if a squadron is in support of an MAGTF as the ACE, the requirement for manning a control center would best be managed by the MAGTF headquarters. The MAGTF headquarters has sufficient personnel to provide the ACE commander with information concerning friendly and enemy NBC operations. If required, the MWSS provides an NBC defense control center to the ACE.

1-33. Each squadron will be capable of performing immediate and operational decontamination of its personnel and equipment. If thorough decontamination operations are necessary, each squadron should be prepared to augment the MWSS with extra personnel to facilitate their support of squadron decontamination efforts.

1-34. If directed, each squadron will provide personnel to the MWSS in support of airfield monitor/survey team operations.

MARINE WING SUPPORT SQUADRON

1-35. The MWSS NBC defense section has a decontamination station supervisor for each type of detailed decontamination. It also has a contamination control supervisor and an NBCC that may be attached to the ACE. It may be necessary to obtain augmentation from the other squadrons within the group in order to fully staff the control center.

1-36. The MWSS CSSE battalions possess the equipment and personnel required to perform NBC defense operations. A provisional NBC decontamination company may be organized and attached to the CSSE command element based on the NBC threat.

FORCE SERVICE SUPPORT ELEMENT

1-37. The force service support group (FSSG) G-3 section contains an NBC defense platoon. Elements of this platoon are used to form the CSSE NBCC; coordinate, evaluate and, if necessary, augment any NBC defense operations conducted within the FSSG AOR; and provide the nucleus of a reinforced platoon or provisional unit to support MAGTF operations with deliberate decontamination support as directed by the MAGTF command element.

1-38. The FSSG's motor transport battalion has transport assets that can support the NBC unit. The FSSG commander can augment the NBC platoon with engineers and with other assets from the FSSG to form a reinforced platoon or provisional unit. Engineer officers and enlisted hygiene equipment operators from the shower unit of the engineer support battalion can be trained in NBC decontamination operations. In addition to thorough decontamination operations, the reinforced platoon or unit can provide shower operations; water purification; water point and NBC reconnaissance; water storage; desalinization operations; generator, air-conditioning, and refrigeration maintenance; CP shelter construction; and thorough decontamination operations.

SECTION II – USMC ASSETS

With the primary exception of the CBIRF, the Marine Corps does not operate with structured NBC defense units. USMC capabilities in this appendix are based on unit equipment and individual/collective training. Marines receive training in NBC detection, protection, and decontamination operations. USMC NBC defense personnel include warrant officers and NBC specialists who are responsible for manning NBCCs, training units, and maintaining NBC equipment. Personnel-intensive tasks such as unit decontamination and NBC reconnaissance operations are performed by additional duty marines from within the unit. Nearly all NBCDE used by the Marine Corps mirrors that of the other services in types, capabilities, and quantities authorized. Table G-1 depicts specialized items of NBCDE unique to the Marine Corps.

Table C-1. USMC-Unique NBCDE

Individual Protection Equipment	Description
Aircrew Protective Clothing/Equipment	The aircrew protective clothing/equipment consists of a respiratory assembly composed of the MCK-3A/P mask with hood, facepiece, ventilator and intercom set; a helmet assembly for use with the mask; underclothes; plastic disposable footwear covers and cape; chemical protective gloves and cotton inserts; chemical protective socks; a marine aviator CB protective suit liner; and a CMU-23A/P survival vest.
CPO (Saratoga Suit)	Two-piece CP suit consisting of jacket with integral hood and trousers. Launderable 4 times. Provide 24-hour CB protection post exposure.
CP Equipment	**Description**
Portable CP System	Mobile CP shelter. Consists of shelter, support kit, and filter. Accommodates 12 to 14 personnel.
Decontamination Equipment	**Description**
M17 Series Decontamination Apparatus (Multi- Fuel)	Power-driven, portable, lightweight decontamination system designed to draw water from any source and deliver it at high pressure and temperatures; also converted for diesel fuel operations.

CHEMICAL/BIOLOGICAL INCIDENT RESPONSE FORCE

2-1. The CBIRF was established by direction of the Commandant of the Marine Corps as a result of Presidential Decision Directive 39 (PDD-39), which states, "The United States shall give the highest priority to developing the capability to manage the consequences of nuclear, biological or chemical materials or weapons use by terrorists."

MISSION

2-2. When directed, CBIRF may forward deploy domestically or overseas in order to provide force protection and/or mitigation in the event of a WMD incident. The CBIRF is prepared to respond to no-notice WMD incidents with a rapidly deployable initial response force (IRF). CBIRF also continues to be innovative to support the development of consequence management concepts, doctrine, organization, TTP, and equipment. CBIRF conducts force protection training for fleet units and federal, state, and local response forces in developing training programs to manage the consequences of a WMD incident. The CBIRF focus of effort during consequence management operations is to turn contaminated casualties into decontaminated patients.

CBIRF ORGANIZATIONAL STRUCTURE (CONUS/OCONUS)

2-3. In garrison, CBIRF is under the OPCON and administrative control of II Marine Expeditionary Force and Marine Corps Forces, Atlantic. In a no-notice or pre-staged response within the US, CBIRF would likely be OPCON to a JTF. The JTF would provide C^2 for most DOD assets in support of the response. During domestic response ground operations, CBIRF supports the US Public Health Service in DS of first responders, such as local fire departments. Overseas, CBIRF would likely be OPCON to a JTF or joint interagency task force established by the JFC for consequence management operations.

CBIRF MISCONCEPTIONS

2-4. CBIRF is sometimes perceived as an enhanced Nuclear Biological and Chemical Defense (NBCD) unit. In reality, CM operations are generally more complex than tactical NBCD and CBIRF was organized specifically to respond to and mitigate the effects of a WMD event by providing its unique capabilities in the areas of C^2, force protection, enhanced NBC reconnaissance, ambulatory and non-ambulatory personnel decontamination, security, search, and rescue, triage and stabilization and service support. Before describing CBIRF capabilities in detail, it is important to clarify some common misconceptions.

- CBIRF has limited organic equipment decontamination capability, but does NOT conduct DED or area decontamination operations.
- In addition to standard MOPP equipment, CBIRF can also employ enhanced personal protective equipment (PPE) to conduct operations in TIC/TIM environments.
- CBIRF also has state of the art monitoring and detection equipment used to identify, sample, and analyze chemical, biological, radiological, and nuclear hazards including TIC and TIM as well as oxygen and lower explosive level instruments.
- The CBIRF security, search, and rescue element's primary focus is on casualty search and extraction procedures, including confined and vertical space extraction. Element personnel are also qualified on Level A self-contained breathing apparatus (SCBA) operations.

CBIRF C^2 ELEMENT CAPABILITIES

2-5. The capabilities of the C^2 element include the following:

- Provides liaison teams to other agencies or commands.
- Interfaces with local and military commanders.
- Employs forces to mitigate effects of WMD incidents.
- Coordinates all on-site CBIRF operations.
- Establishes data/voice reachback to scientific and medical advisors.
- Prepares chemical, biological, or radiological plume models.

CBIRF FORCE PROTECTION RECON ELEMENT CAPABILITIES

2-6. The capabilities of the force protection reconnaissance element include the following:

- Provides 26-person reconnaissance team.
- Conducts Level A, Level B, and SCBA operations.
- Identifies all known military agents.
- Detects TIC/TIM compounds.
- Detects five most probable biological agents.
- Monitors for military chemical agents and compounds.
- Detects and monitors beta and gamma radiation.

CBIRF FORCE PROTECTION ELEMENT DECONTAMINATION CAPABILTIES

2-7. The capabilities of the force protection element's decontamination element include the following:

- Provides 32-person decontamination team.
- Conducts Level B, SCBA, and Level C (MOPP4) operations.
- Conducts detailed personnel decontamination for 150 ambulatory casualties per hour.
- Conducts detailed personnel decontamination for 50 nonambulatory casualties per hour.
- Conducts hospital patient support decontamination.
- Conducts force protection decontamination.
- Performs EOD.
- Provides four-person EOD team.
- Conducts Level A and SCBA operations.
- Identifies devices/threats.
- X-rays devices.
- Renders safe.
- Conducts mitigation.

CBIRF FORCE PROTECTION ELEMENT SECURITY ELEMENT CAPABILITIES

2-8. The capabilities of the security element include the following:

- Employs two two-person interdiction teams.
- Conducts Level A and SCBA operations.
- Conducts immediate casualty management.
- Conducts force protection extraction.
- Employs nine four-person search teams.

- Employs 20 four-person extraction teams.
- Conducts confined space extraction.
- Conducts vertical extraction.
- Conducts limited site/force security.

CBIRF MEDICAL ELEMENT

2.9. The capabilities of the medical element include the following:

- Employs two two-person decontamination triage teams.
- Employs two eight-person medical assist teams.
- Employs one eight-person medical stabilization team.
- Conducts initial epidemiological investigations.
- Provides force medical care.

CBIRF SERVICE SUPPORT ELEMENT

2-10. The capabilities of the service support element include the following:

- Conducts sustainment operations.
- Provides power generation.
- Provides water purification.
- Provides organic transport of CBIRF personnel and mission-essential equipment.

CBIRF IRF

2-11. CBIRF will deploy a highly-trained and equipped IRF (approximately 81 marines and sailors) capable of providing force protection and mitigation of NBC and radiological incidents within six hours of notification. The IRF provides an initial response capability and possesses a limited sustainment capacity (approximately 24 hours).

CBIRF IRF PREDEPLOYMENT GUIDELINES

2-12. When possible, CBIRF forward deploys as a total force in order to respond to a WMD credible threat, for events of national importance or as a force protector. In no-notice incidents, CBIRF will deploy a task-organized advance team to provide initial critical support to the incident commander and to facilitate arrival of the IRF and the follow-on force (FOF). With limited sustainment, the IRF can deploy within six hours of notification from the designated APOE in response to a no-notice incident. The IRF is capable of responding to CONUS and OCONUS events via strategic military or civilian aircraft or organic ground transportation. The IRF is CBIRF's initial and most expeditious response to a contingency. The IRF initially provides limited detection, monitoring, identification, search and extraction, and medical support. Initial support by the IRF will be self-sustaining until the FOF arrives (approximately 24 hours). The IRF is a standing, rapid-response force prepared to quickly deploy to an incident. Marines and sailors assigned to the IRF are

trained to high levels of technical and tactical proficiency and are rotated on a 30-day basis to ensure readiness. Mission-essential equipment is embarked to facilitate timely and flexible response. The CBIRF rear detachment will be prepared to provide required andadministrative and logistic support to forward-deployed CBIRF operatingforces.

CBIRF IRF TASKS

2-13. Taskings include, but are not limited to, the following (additional specified and implied tasks will be provided in the warning order issued by higher headquarters):

- Chemical, biological, and radiological identification, sampling, and monitoring (specified task).
- Survey and casualty management (search, extract, and medical assistance)(specified task).
- Ambulatory/nonambulatory casualty decontamination (specified task).
- Render-safe improvised explosive devices (specified task).
- Security operations (specified task).
- Technical assistance (specified task).
- Coordinate with CONUS/OCONUS agencies (implied task).
- Force protection decontamination of CBIRF personnel (implied task).
- Communication plan/frequencies (implied task).
- Coordinate airlift (implied task).
- Plan air/ground surveys(implied task) .
- Deploy advance team (implied task).
- Gather information requirements (implied task).
- Identify chain of custody requirements(implied task).
- Coordinate with reachback/technical advisors.
- Prepare media plan (implied task).
- Identify personnel/equipment shortfalls (implied task).
- Coordinate logistics, supply, and resupply (implied task).
- Identify and prioritize lift requirements (air/ground) (implied task).
- Plume modeling (implied task).

FOF TASKS

2-14. Taskings include, but are not limited to, the following:

- Prepare to deploy FOF.
- Be prepared to reinforce IRF.
- Coordinate airlift.
- Plan air/ground movement.
- Identify personnel and equipment shortfalls.

- Maintain connectivity with IRF during air/ground movement.
- Continue coordination of logistics, supply, and resupply.
- Identify and prioritize lift requirements.

SECTION III – USMC STAFF RESPONSIBILITIES IN NBC OPERATIONS

3-1. As a staff officer, the MAGTF NBC officer has no authority over subordinate commanders. NBC defense is part of all operations and NBC defense operations are often conducted with the same assets that perform other tasks assigned to subordinate commanders. Therefore, care must be taken when delegating authority to NBC officers to ensure that their instructions and those of the commander and operations officer do not conflict. Timeliness, accuracy, and efficiency of MAGTF command and staff actions in an NBC environment depend on the staff's state of preparedness. Staff officers need to understand the characteristics and effects of NBC weapons as they relate to the conduct of specific warfighting functions. Staff considerations for NBC warfare must become a routine concern in the planning and training phases of an MAGTF's continuous preparation for combat operations. Effective staff support in an NBC environment is facilitated by—

- Knowledge of general and special staff functions.
- Knowledge of staff planning and command and staff NBC considerations.
- Knowledge of NBC weapons, effects, and personnel and material responses.

3-2. To effectively defend against an NBC attack, commanders and staff officers require a general knowledge of the characteristics, effects, and concept for employment and defense against NBC munitions. The technical knowledge and skills required for NBC defense are provided by personnel especially trained for NBC duties. These specialists form the nucleus (NBC section) for NBC staff functions within the MAGTF. During NBC operations, these sections organize into NBCCs. NBCCs are formed at all echelons of command down to the battalion level. The NBC officer, under the cognizance of the G-3/S-3, supervises the NBCC and all NBC operations. At each echelon of command, the NBC officer and NCO assist and make recommendations to the appropriate staff officers.

ASSISTANT CHIEF OF STAFF, G-1/S-1

3-3. The G-1/S-1's responsibilities include the following:

- Prepares and maintains NBC casualty records, reports, and unit radiation dosage records in coordination with the medical officer and NBC officer/NCO.
- Coordinates radiation exposure status of subordinate organizations with the G-3/S-3 and medical officer.
- Incorporates contamination considerations.
- Determines straggler control measures.

- Supervises graves registration.
- Coordinates with the NBC officer for the handling of prisoners of war (POWs) in order to provide NBC protective equipment and self-decontamination operations as specified in current international agreements and treaties.
- Coordinates with the G-3/S-3 for the appropriate priority/ assignment of personnel to NBC billets.

ASSISTANT CHIEF OF STAFF, G-2/S-2

3-4. The Assistant Chief of Staff, G-2/S-2, responsibilities include supervising the production and dissemination of intelligence in the following areas:

- Enemy NBC capabilities including production capabilities, weapons, and delivery systems.
- Enemy NBCDE and training status.
- Enemy intent to use NBC weapons.
- Identifies and locates targets appropriate for nuclear attack.
- Initiates activities that degrade and counter the enemy's ability to acquire targets for NBC attack.
- Recommends NBC reconnaissance of routes and areas.

ASSISTANT CHIEF OF STAFF, G-3/S-3

3-5. The Assistant Chief of Staff, G-3/S-3's responsibilities include the following:

- Prepares operation plans, orders, appendices, and annexes in accordance with the commander's guidance for NBC operations.
- Considers the NBC threat when determining the general location of the command post.
- Plans and coordinates NBC defense training and inspections.
- Reviews and updates NBC defense SOPs as well as training SOPs.
- Prepares and supervises the NBC training program.
- Supervises training of NBC monitor/survey teams, decontamination teams, and NBCC personnel.
- Inspects subordinate units' NBC equipment.
- Activates the NBCC and coordinates its activities.
- Prepares and disseminates friendly force hazard predictions, minimum MOPP recommendations, and effective downwind messages to subordinate units.
- Recommends required units, personnel, and equipment to conduct radiological/chemical surveys.
- Forwards NBC reports and enemy NBC attack alerts to higher, subordinate, and adjacent units or headquarters.

- Directs and supervises chemical detection, biological sampling, and radiological monitoring/surveillance operations and reports within the unit.
- Ensures the preparation and promulgation of troop safety information.

ASSISTANT CHIEF OF STAFF G-4/S-4

3-6. The Assistant Chief of Staff G-4/S-4's responsibilities include the following:

- Disperses logistic support facilities to reduce vulnerability to NBC weapons.
- Plans for increased transportation requirements due to the dispersion of units, increased demand for NBC replacement equipment, and decontamination logistic requirements.
- Ensures availability of NBCDE.
- Supervises maintenance of NBCDE.
- Develops plans to transport increased numbers of uncontaminated and contaminated casualties.
- Plans for large-scale, thorough decontamination operations in response to an NBC attack.
- Prepares plans for and, when directed, supervises the construction and/or use of personnel shelters, decontamination sites, emergency power plants, and laundry facilities.
- Receives recommendations from the NBC officer or NCO on NBC equipment and supply requirements.
- Receives NBC equipment and supply request information from the NBC officer or NCO and effectively ensures distribution.
- Supervises installation and establishment of CP facilities as recommended by the NBC officer or NCO.

MEDICAL OFFICER

3-7. The medical officer's responsibilities include the following:

- Prescribes treatment procedures for NBC casualties.
- Ensures that facilities for treatment of NBC casualties are available.
- Supervises the inspection of food and water supplies for signs of contamination.
- Coordinates with the NBCC to monitor and evaluate a subordinate unit's nuclear radiation exposure history.
- Advises the commander and G-3/S-3 on the impact of a unit's additional exposure.
- Makes recommendations to prevent and takes actions to detect contamination of food and water supplies.
- Coordinates the collection and processing of all biological samples with the unit NBC defense officer.

- Oversees periodic monitoring of all individual health records to ensure up-to-date immunization of all personnel against potential biological agents.
- Verifies that personnel requiring optical inserts have them.
- Ensures the training of medical personnel in the treatment of NBC casualties.
- Coordinates the training of marines to identify NBC exposure symptoms.
- Provides first aid response in conjunction with the G-3/S-3.
- Coordinates with the G-4/S-4 the procurement and distribution of all medical supplies required for the treatment of NBC casualties.
- Develops plans, in coordination with the G-4/S-4, for the handling and movement of contaminated casualties.
- Plans and supervises medical treatment of POWs, CIs, and detainees that may have been exposed to NBC agents.
- Assists the G-1/S-1 in maintaining radiation exposure records.
- Maintains and distributes, in coordination with the NBC officer or NCO, information on NBC antidotes.
- Coordinates with the NBC officer or NCO to determine the requirements for medical personnel in casualty decontamination.

ENGINEER OFFICER

3-8. The engineer officer's responsibilities include the following:

- Provides engineer technical expertise in the decontamination of engineer equipment.
- Coordinates with the G-4/S-4, NBC officer, and appropriate construction units the building of thorough decontamination sites. Primary emphasis is on the utilization of existing structures.
- Plans for construction of fortifications, installations, and facilities that provide maximum protection against NBC weapons.
- Prepares plans for emergency tasks. This includes water decontamination and restoration of tactical facilities.
- Recommends traffic regulations for routes of communication. Recommendations must address physical and contamination conditions.
- Coordinates well-drilling operations with naval construction battalions.
- Maintains "B" table of authorized material control number NBC decontamination equipment

MOTOR TRANSPORT OFFICER

3-9. The motor transport officer's responsibilities include the following:

- Assists in the decontamination of motor transport equipment.
- Coordinates with the G-4/S-4 for the mass evacuation of personnel and material under NBC conditions.

- Coordinates with the G-4/S-4 and NBC officer for the possible use of maintenance facilities as decontamination sites.

SUPPLY OFFICER

3-10. The supply officer's responsibilities include the following:

- Coordinates with the G-4/S-4 the acquisition, storage, control, issue, security, recovery, supervision, and redistribution of all NBC equipment and supplies.
- Provides advice and supervises NBC supply procedures. This includes property accountability and responsibility.

ASSISTANT CHIEF OF STAFF, G-6/S-6

3-11. The Assistant Chief of Staff, G-6/S-6's responsibilities include the following:

- Supervises maintenance of RADIAC equipment in accordance with appropriate technical instructions.
- Provides a CE annex to operational orders/plans. This includes appropriate net utilization for NBC traffic if required.
- Provides communications for NBC teams directly under the control of the headquarters.
- Prepares special communications plans for mass casualty evacuation.
- Plans to counter the effect of EMP on communication equipment.

DIVISION ARTILLERY OFFICER

3-12. The division artillery officer's responsibilities include the following:

- Coordinates with supporting artillery commander and/or meteorological detachment to provide meteorological data for use in fallout prediction.
- Coordinates the requirement for CDMs.

MARINE CORPS FORCES UNIT NBC OFFICERS

3-13. The duties and responsibilities of Marine Corps forces unit NBC officers are determined by the unit level of assignment. In the broadest terms, their primary concern is the establishment of passive NBC defensive measures.

DIVISION, WING, FSSG, AND MAGTF COMMAND ELEMENTS NBC OFFICERS

3-14. Division, Wing, FSSG, and MAGTF command elements NBC officers responsibilities include the following:

- Advise the commander on NBC defense readiness.
- Advise the commander on OEG.

- Prepare the NBC defense plans, orders, and instructions necessary to implement the commander's policies. This includes SOPs for NBC defense, NBC orders and annexes, and NBC inspections.
- Determine and recommend requirements for NBC supplies and equipment.
- Estimate personnel, equipment, and supply requirements to support the NBC appendix of the operation order.
- Coordinate and develop NBC defense training exercises.
- Evaluate unit NBC defense readiness.
- Supervise operation of the NBCC.
- Conduct and supervise NBC equipment inspections.
- Provide recommendations for the training of the command and for the training of NBC specialists. This includes formal school quotas.
- Provide technical assistance in the examination of captured NBC equipment.
- Plan and make recommendations for decontamination functions.
- Perform other duties as directed.

REGIMENT, GROUP, AND BATTALION NBC OFFICER

3-15. Regiment, group, and battalion NBC officer responsibilities include the following:

- Provide information (in conjunction with the G-2/S-2) concerning NBC organization, weapons, equipment, and techniques indicative of enemy preparations for an NBC attack.
- Provide information (in conjunction with the G-2/S-2) concerning the effects of terrain and weather on enemy or friendly employment of NBC agents.
- Determine NBC reconnaissance (in conjunction with the G-2/S-2) required in areas or routes intended for use by friendly troops.
- Plan NBC monitor/survey operations within the unit's AO.
- Interpret radiological information (fallout prediction, actual fallout, and monitor information).
- Appraise tactical significance of residual radiation areas.
- Coordinate with the medical officer to determine radiation effects on personnel.
- Interpret chemical information (chemical prediction and monitor/survey data.
- Coordinate the unit NBC defense training program.
- Plan for immediate and operational decontamination of personnel and equipment.
- Supervise the procurement, issue, installation, and maintenance of unit NBC equipment.

- Supervise the operation of the NBCC.
- Advise assignment of NBC-trained personnel.
- Monitor employment of NBC defense teams.
- Notify commanders if contaminated areas are within the AO.
- Supervise training and activities of the NBC specialist.
- Advise subordinate commander.

COMPANY, BATTERY, AND SQUADRON

3-16. Company, battery, and squadron NBC responsibilities are usually assigned as an additional duty at these levels. These unit NBC officers' responsibilities include:

- Train unit-level individuals in the effective use of individual NBC-protective items.
- Supervise company, battery, and squadron monitoring/survey operations.
- Supervise NBC reconnaissance of routes and areas to be occupied.
- Supervise the preparation of NBC 1 and 4 reports.
- Maintain company, battery, and squadron radiation dosage records.
- Advise the battalion or group NBC officer on the conduct of integrated NBC training within the company, battery, or squadron training program.
- Assist in first aid or evacuation of NBC casualties.
- Supervise basic skills and immediate decontamination of personnel and equipment.
- Supervise the training of NBC techniques and procedures (i.e., unmasking procedures and crossing of contaminated areas).
- Supervise the marking of contaminated areas.
- Supervise the training and activities of the NBC NCO.

Appendix D

USAF NBC CAPABILITIES

The USAF must be prepared to conduct prompt, sustained, and decisive combat operations in NBC environments. An adversary's NBC capabilities can have a profound impact on US and multinational objectives, campaign plans, and supporting actions and therefore must be taken into account in operational and tactical planning.

SECTION I – USAF (ORGANIZATION)

This section addresses the air base command structure and selected units for support of NBC defense measures.

WING OPERATIONS CENTER (WOC)

1-1. The top echelon of the organization for base recovery operations is the WOC. The WOC is primarily concerned with continuing the flying operation (or whatever other major base mission) of the base, and the general condition and operations of the base facilities. The battle staff within the WOC consists of the wing commander and representatives from aircraft operations, aircraft maintenance, logistics support, intelligence, and weather. Other personnel may be added or substituted as the base mission and situation dictate. The battle staff supports the wing commander in assessing the situation, determining and prioritizing defensive actions, and implementing the actions in priority sequence. In most cases, this requires a team effort since all NBC decisions have far-reaching impact and are best made after consideration of all available information. The wing commander usually directs the integration of all wartime functions from the WOC with direct links to other command posts such as air defense, maintenance, and the survival recovery center (SRC).

SURVIVAL RECOVERY CENTER

1-2. The SRC is established specifically to direct all base operability, survivability, and recovery operations. It is usually located with or near the WOC battle staff area to allow close coordination of the recovery effort and permit the battle staff easy viewing of SRC displays. In the SRC, the support group commander and his staff form the nerve center for base recovery as they collect, analyze, prioritize, display, and report information on the status of the base. Several control centers support the SRC. Among these are the civil engineer damage control center (DCC), security police BDOC, services control center, and centers for communications and medical support. These centers are responsible for collecting information up and down the C^2 chain and providing data to the WOC and SRC to assist in planning and decision making.

Supporting the support group commander are representatives from each of these control centers. Also present in the SRC are an engineer readiness officer who oversees the administration of the SRC, coordinates the activities of the staff, and advises the commander and battle staff on CW defense matters; an EOD representative who coordinates the render-safing of unexploded munitions on the air base; readiness technicians who plot NBC contamination and control the NBC survey teams; and a personnel representative who monitors personnel strength. The base civil engineer (BCE) or a senior designated representative serves as the senior advisor to the SRC commander on engineering matters. From the SRC, the BCE provides direction to the rapid runway repair (RRR) team and other civil engineer recovery forces through the DCC. Also in the SRC is the engineer minimum operating strip, selection team, which monitors damage assessment reports, plots airfield damage, and determines possible MOS candidates. The BCE normally oversees the MOS selection process and recommends MOS candidates to the commander.

NBC CELL

1-3. When operating in a postattack situation, the readiness personnel in the SRC function in what is commonly referred to as the NBC cell. The NBC cell obtains wind data from the base weather officer, receives reports of actual or suspected NBC attacks, plots locations of NBC attacks, predicts areas of probable NBC contamination, advises other bases and units of potential downwind NBC hazards, sends NBC reports to theater command elements, plots areas of NBC hazard after detailed monitoring is conducted, and advises the readiness officer in the SRC. Personnel functioning as NBC cell members must maintain close contact with intelligence personnel in the WOC.

DCC FUNCTIONS

1-4. The DCC is one of many functional control centers activated to deal with contingencies. Its responsibilities as a functional control center are to recall and account for personnel, receive and disseminate information, report damage and casualty information, and deploy and monitor response teams. Specifically, the DCC monitors and coordinates the civil engineer recovery actions involved in damage assessment, decontamination, and damage recovery and repair as directed by the SRC.

AIR FORCE UNITS

READINESS FLIGHTS

1-5. The Civil Engineer Readiness Flight is the organization responsible for all actions and measures taken to protect air base resources from the effects of attack, natural disasters, and major accidents, as well as restoring these resources after disasters. Additionally, they provide specialized training to survey and monitoring team and CCT members.

PRIME BASE ENGINEER EMERGENCY FORCE (PRIME BEEF) TEAMS

1-6. Prime BEEF teams are a component of the Readiness Flight. These mobile combat support organizations are designed to support a wide variety of missions

from fire suppression to protecting base resources from conventional or NBC attack.

RAPID ENGINEER DEPLOYABLE HEAVY OPERATIONAL SQUADRON, ENGINEER (RED HORSE) SQUADRONS

1-7. Air Force RED HORSE squadrons are mobile, rapidly deployable, self-sufficient units capable of providing airfield and base heavy construction

SECTION II – USAF (ASSETS)

NBC defense in the Air Force is focused on the three key areas of avoidance, protection, and decontamination. All members receive training in basic NBC defense procedures. This training provided by civil engineer readiness flight personnel provide instruction on attack actions, warning and reporting, IPE, CP, personal decontamination, and contamination control procedures. Additionally, air wings designate personnel within their units to serve on special teams that support installation NBC defense. These teams known as shelter management teams (SMTs), CCTs, and DP support teams provide the base with support in the areas of NBC decontamination, detection, and survey operations. Table D-1 depicts items of NBCDE unique to the Air Force.

Table D-1. NBCDE (USAF)

CLOTHING ITEMS	DESCRIPTION
Aircrewman Cape, CB Protective	Disposable; plastic polyethylene; 74" long.
Apron, TAP:Cotton Cloth Rubber Coated	Rubber, synthetic overall. Toxicological agent-resistant.
Bag, Chemical Protective Equipment	Carry-all bag.
Boots, TAP, Butyl Rubber: M2A1	TAP rubber boot.
Cover, Helmet, CP	Chemically protected helmet cover.
Coveralls, TAP: Coated Nylon, OD	Butyl rubber coverall.
Footwear Cover, CP, Rubber	Chemical-protective, acid-resistant, fire-resistant, and jet-fuel–resistant.
Gloves, TAP, Butyl Rubber, Type II	14" gauntlet.
Gloves, CP Rubber, Type I, Butyl Rubber	14" gauntlet, rubber butyl glove.

1 **Table D-1. NBCDE (USAF) (Continued)**

CLOTHING ITEMS	DESCRIPTION
JSLIST, Improved Chemical-Protective Gloves	Made of permeable materials and designed to be worn as the primary CB-protective overgarment over the duty uniform or as a duty uniform over personal underwear. The suit is made of a carbon bead material with an outer layer. The outer layer is made of materials similar materials to the battle dress uniform and is designed to repel water and CB agents. The suit is a two-piece garment (coat and trousers) with an integral hood that is compatible with existing protective masks. The coat and trousers are packaged and issued separately but are worn together as an overgarment.
Overshoes, Men's, Black Vinyl	Oil-, chemical-, and fuel-resistant. For use with combat boots.
Overshoes, Green Vinyl	Oil-resistant overall. For use with combat boots.
Suit, Aircrew, Chemical Protective CWU-66/77P	Comes in 24 sizes. The fabric is made of two layers of cloth with activated carbon spheres laminated between them.
Battle Dress Overgarment	A two-piece garment (coat and trousers) made of two layers of permeable material. The outer nylon/cotton twill shell is water repellant. The inner layer is charcoal-impregnated foam laminated to black nylon tricot.
MASKS	**DESCRIPTION**
Mask, CB, M17A2	NBC-protective mask with dual clear eye lenses and one voicemitter (front).
Mask, MCU-2/AP	Facepiece consists of siiicone rubber, a large single clear urethane lens, nose cup, drinking tube, and two voicemitters (front and side).
MASK ASSOCIATED PARTS & ITEMS	**DESCRIPTION**
Filter canister, C2A1/C2	Chemical-resistant rubber. Fits the M45 and MCU-2A/P masks.
Filter set, M13A2	Chemical-resistant rubber. Fits M17A2 mask.
Hood, M6A2	Drawcord and shoulder straps, two eye and two air inlets, and one speech diaphram outlet valve. For M17A2 mask.
Hood, MCU-2A/P (AF/USN)	Chemical-resistant rubber. Drawcord and under-arm straps.
DETECTORS	**DESCRIPTION**
Hand Held Immunochromatographic Assays	A simple, disposable, antibody-mediated assay for identifying BW agents in suspect samples.

Table D-1. NBCDE (USAF) (Continued)

DETECTORS	DESCRIPTION
Alarm, Chemical Agent, Automatic, M22	The M22 detects blister and nerve agents in the air as vapors, inhalable aerosols, and vapors from the surface of liquids. It has an audible alarm and visual display when alarming in the presence of chemical agents. The M22 displays the agent as G or H series and indicates concentration levels using an eight-digit bar graph. The M22 may be connected to M42 remote alarms for rapid notification of detection.
Chemical Agent Monitor	A portable, hand-held instrument designed to determine and indicate the hazard from nerve or mustard agent vapor present in the air.
Improved Chemical Agent Monitor	A portable, hand-held instrument designed to determine and indicate the hazard from nerve or mustard agent vapor present in the air.
Detector Kit, Chem Agent, M256A1	Detects and classifies field concentrations of toxic chemical agents
Detector Paper, Chemical Agent, M8	Chemically treated paper, capable of detecting nerve & blister agents

PRIME BEEF ASSETS

2-1. Table D-2 depicts the specialized equipment organic to this unit.

Table D-2. Engineer Emergency Force Equipment

Equipment	Remarks
Power Production	Power generation equipment.
Civil Engineer Control Set	Team checklists for decontamination, fire protection, rapid runway repair, and major accident response.
Structures Sets	Tools and materials suitable for the construction of covers/sheds.
Pest Management Sets	Respirators, protective clothing, vector control equipment.
Firefighting Clothing Sets	High-pressure/volume fire fighting equipment, SCBAs.

RED HORSE SQUADON ASSETS

2-2. Table D-3 depicts the specialized/unique equipment organic to this unit.

Table D-3. RED HORSE Squadron Equipment

Equipment	Remarks
Crane, 15-Ton Loader, Scoop Loader, 2½ yd^3 Rock Drill Crawler	Equipment for support of large-scale decontamination operations/procedures (i.e., terrain decontamination, sealing, covering, clearing, removing, etc.).
Well Drilling Machine Trailer, Light, 6-Ton Sweeper Mixer, Roto (Concrete Mixer) Roller, Vibrating Forklift, 10-ton Truck, 20-ton Tractor, IW – 70 Truck, Tractor Truck, 14-yd^3 Trailer, 50-ton Dozer, T-7 Dozer, T-9 Truck, M35 Crush Trailer Cleaner, Vac	Equipment to support the establishment of decontamination sites or modification of existing facilities to support decontamination operations (i.e. wash racks, rail yards, etc.).

SECTION III – USAF STAFF RESPONSIBILITIES

This section addresses NBC defense responsibilities for key airbase personnel/teams. The commanders are key links to base readiness to ensure the preparedness of subordinate units.

WING COMMANDERS

3-1. Wing commanders should assess intelligence indicators and the operational situation to determine when NBC defense measures are necessary and implement these measures as prescribed by emergency action checklists. Commanders should recognize that when the threat of NBC attack is high, the relatively short-term expenditure of time and resources for NBC defense and the resultant hindrance of mission execution may be necessary sacrifices to permit the mission to continue over the long run. Specific responsibilities can include the following:

- Assess intelligence indicators and operational situation to determine when NBC defense measures are necessary.
- Manage use of IPE by declaring appropriate MOPP levels based on the operational situation.

- Ensure the presence of a dedicated NBC staff to provide training, recommendations on hazards, and related protective and medical measures, and operate the base's warning and reporting system.
- Equip deployment forces.
- Maintain NBC defense capabilities and have an understanding of their force protection capabilities and limitations.
- Assess how wartime HN support can assist in their NBC defense efforts.
- Through civil engineer and communications organizations, install and maintain an installation warning system.
- Ensure units, deployed and in place, possess the contamination control and shelter management capabilities they need to meet mission requirements.
- Direct MOPP levels and variations.
- Establish and oversee the SRC during contingencies.

BASE CIVIL ENGINEER

3-2. As a member of the SRC staff, the BCE is the C^2 link between the SRC and the DCC. From the SRC, the BCE directs the dispatch of damage assessment teams; receives, reviews, and evaluates damage assessment reports; and assists the commander in developing and implementing the base recovery strategy. This level of activity will demand that the BCE be totally conversant with civil engineer contingency and wartime operational concepts. He must be knowledgeable of RRR procedures and sequencing, damage assessment and response team procedures, capabilities and limitations of all recovery teams, firefighting operational concepts, and base recovery plans and priorities. Without a solid background in these areas, decisions become more difficult and more prone to error. In turn, C^2 suffers and the effectiveness of the unit deteriorates. Such knowledge and information must be gained during peacetime. Due to its complexity and scope, it cannot be assimilated well under conflict conditions. But more importantly, because of its criticality to the success of the base mission, it cannot be left to chance. The readiness officer representative monitors the status of NBC survey teams, controls their dispatch, and ensures areas of NBC contamination and locations of survey teams are plotted on the SRC map. He advises the SRC and installation commanders on NBC and conventional warfare effects, alarm status, and protective measures, and predicts the effects of NBC contamination on mission capability. Like the BCE, the readiness officer representative must be thoroughly knowledgeable in the necessary wartime tasks and responsibilities. These include, as a minimum, all major facets of NBC defense and SRC operations. Specific responsibilities may include the following:

- Oversee management of air base DP and NBC defense programs. Briefs the installation commander and staff on the status of the DP program.
- Provide NBC training for specialized teams as well as individual training for all deployed or deployable personnel

- Identify the types of disasters most likely to affect the installation. Provide planning and response guidance on mitigating the effects of these disasters.
- Insert DP guidance into applicable operations orders, plans, directives, and similar documents.
- Advise units on equipment acquisition, maintenance, and use of specialized NBCDE.
- Advise the commander on sustained operations in a contaminated environment.
- Manage airbase detection systems to include operating a control center and a network of detectors for warning purposes.
- Establish an installation protective shelter program.

GROUP, SQUADRON, AND OTHER UNIT COMMANDERS

3-3. Commanders should integrate all facets of NBC defense into their existing combat organizations. They ensure all unit personnel have the necessary training and equipment to protect themselves and carry out their missions. They should also designate appropriate personnel to perform special duties such as managing shelters and leading CCTs. Other responsibilities may include the following:

- Appoint a representative to manage and coordinate unit aspects of the DP program.
- Develop and implement response procedures and checklists to support local response plans, as well as war and contingency planning documents.
- Implement MOPP directed by the installation commander.
- Identify requirements and budget, obtain, store, and maintain unit DP operational and training equipment, including personnel protection items, detection equipment, contamination control materials, and shelter supplies.
- Plan, manage, and operate protective shelter program.
- Ensure deploying personnel are trained to conduct contamination control operations and manage shelters, if the deployed location's joint support plan requires it.
- Establish unit control centers and identify specialized team members as required.
- Establish an NBC contamination control capability as applicable. As a minimum, aircraft maintenance, transportation, civil engineering, and medical activities should have this capability.
- Supplement shelter management, contamination control, and disaster response force training on unit specific procedures and equipment.

MEDICAL

3-4. The medical representative ensures that medical measures are responsive to NBC defense needs and are integrated with nonmedical NBC defense measures, to include preselection and health maintenance, health hazard monitoring, sampling and analysis, health threat and risk assessment, and health hazard control and mitigation. Other responsibilities include the following:

- Advise the commander on medical aspects of NBC defense.
- Provide guidance on health and hygiene matters and provide self-aid and buddy care training to unit personnel.
- Collect, analyze, or ship clinical samples for analysis of indicators of NBC exposure.
- Administer vaccines, antibiotics, and other drugs or procedures necessary to prevent or treat NBC casualties.
- Public health officers monitor medical intelligence information, conduct epidemiological studies, perform disease surveillance, determine safety of food supplies, and advise on field sanitation.
- Bioenvironmental engineers analyze environmental samples, assist in operating automatic detection systems, determine potability of water, advise on PPE, and health risk from threat agents and thermal stresses, and advise on waste management and recovery activities.

SECURITY FORCES

3-5. Security forces conduct visual surveillance for suspicous activity or indications of NBC attacks.

INTELLIGENCE

3-6. Base intelligence personnel identify NBC-capable nations in the vicinity of potential deployment locations, assess NBC capabilities of potential enemies, and gather local information (environmental phenomenon, endemic diseases, flora/fauna, etc.) to assist in the development of baseline data for NBC defense.

SHELTER MANAGEMENT TEAMS

3-7. SMTs prepare shelters to provide the best possible NBC protection, establish contamination control procedures to minimize the amount of contamination entering the shelter, and operate automatic point detection systems.

Appendix E

UNIVERSAL JOINT TASK LIST

Common training standards for NBC defense support increased effectiveness. This process is supported by the UJTL, which provides a standard description of key joint tasks across the range of military operations. For each task, the conditions under which implementation must be conducted supports setting realistic standards. The use of these standards helps to support assessments of unit readiness.

The UJTL provides a source of functional, joint (interoperability) tasks that provide a common language and reference system for strategic-, operational-, and tactical-level planners. The UJTL's joint/ interoperability tasks can be performed by more than one service component to meet the mission-derived conditions and approved standards of the COCOMs. For example, planners and analysts can use the system to translate missions into common language tasks that can serve to derive JMET training requirements. This mission-to-task-to-training connectivity can assist forces in training the way they intend to fight.

The UJTL includes many tasks that can be considered as missions or operations; and help to provide a framework for mission analysis and structuring training events. Further, joint tasks describe in broad terms the current and projected capabilities of the US armed forces; however, the UJTL is not all-inclusive. Service components are capable of tasks beyond those listed. For detailed information on the UJTL, see Chairman Joint Chiefs of Staff Manual 3500.04B; and applicable service directives such as Operational Navy (OPNAV) Instruction 3500.38/Marine Corps Order 3500.26.

Appendix F

NBC Defense Doctrine Hierarchy

A key series of multiservice doctrine and TTP manuals provide commanders and staff with information NBC defense for the structure, operational, and tactical levels of war. Joint doctrine guidance is furnished in JP 3-11 and this FM is supported by a series of supporting multiservice TTP publications. These manuals support a framework (see Figure F-1) that furnishes the services and geographic COCOMs with the doctrine and TTP to support key areas such as avoidance, protection, HSS, and fixed site protection.

- JP 3-11, *Joint Doctrine for Operations in Nuclear, Biological, and Chemical (NBC) Environments*.
- FM 3-11, (USMC/USN/USAF publication numbers to be determined), *NBC Defense Operations*.
- FM 3-3, (USMC/USN/USAF publication numbers to be determined), *MTTP for Contamination Avoidance* (to be published).
- FM 3-4, (USMC/USN/USAF publication numbers to be determined) *MTTP for NBC Protection* (to be published).
- FM 3-4-1, (USMC/USN/USAF publication numbers to be determined) *Multiservice TTP for Fixed Sites, Ports, and Airfields* (to be published).
- FM 3-5, (USMC/USN/USAF publication numbers to be determined), *MTTP for NBC Decontamination* (to be published).
- FM 3-6, (USMC/USN/USAF publication numbers to be determined), *Field Behavior of NBC Agents* (to be published).
- FM 3-9, (USMC/USN/USAF publication numbers to be determined), *Technical Aspects of Chemical and Biological Agents* (to be published).
- FM 3-14, (USMC/USN/USAF publication numbers to be determined), *MTTP for NBC Vulnerability Analysis* (to be published).
- FM 3-19, Fleet Marine Force Manual (FMFM) 11-20, (USN/USAF/USMC publication numbers to be determined), *MTTP for NBC Reconnaissance and Surveillance* (to be published).
- FM 3-21, (USN/USAF/USMC publication numbers to be determined), *MTTP for NBC Aspects of Consequence Management* (to be published).
- FM 8-9, *NATO Handbook on the Medical Aspects of NBC Defensive Operations, AmedP-6(B), Part I Nuclear, Part II Biological*, dated February 1, 1996.
- FM 8-283, *Treatment of Nuclear Warfare Casualties and Low-Level Radiation Injuries*, Initial Draft, dated April 1999.

- FM 8-284, *Treatment of Biological Agent Casualties*, dated July 15, 2000.
- FM 8-285, *Treatment of Chemical Agent Casualties and Conventional Military Chemical Injuries*, dated December 22, 1995.

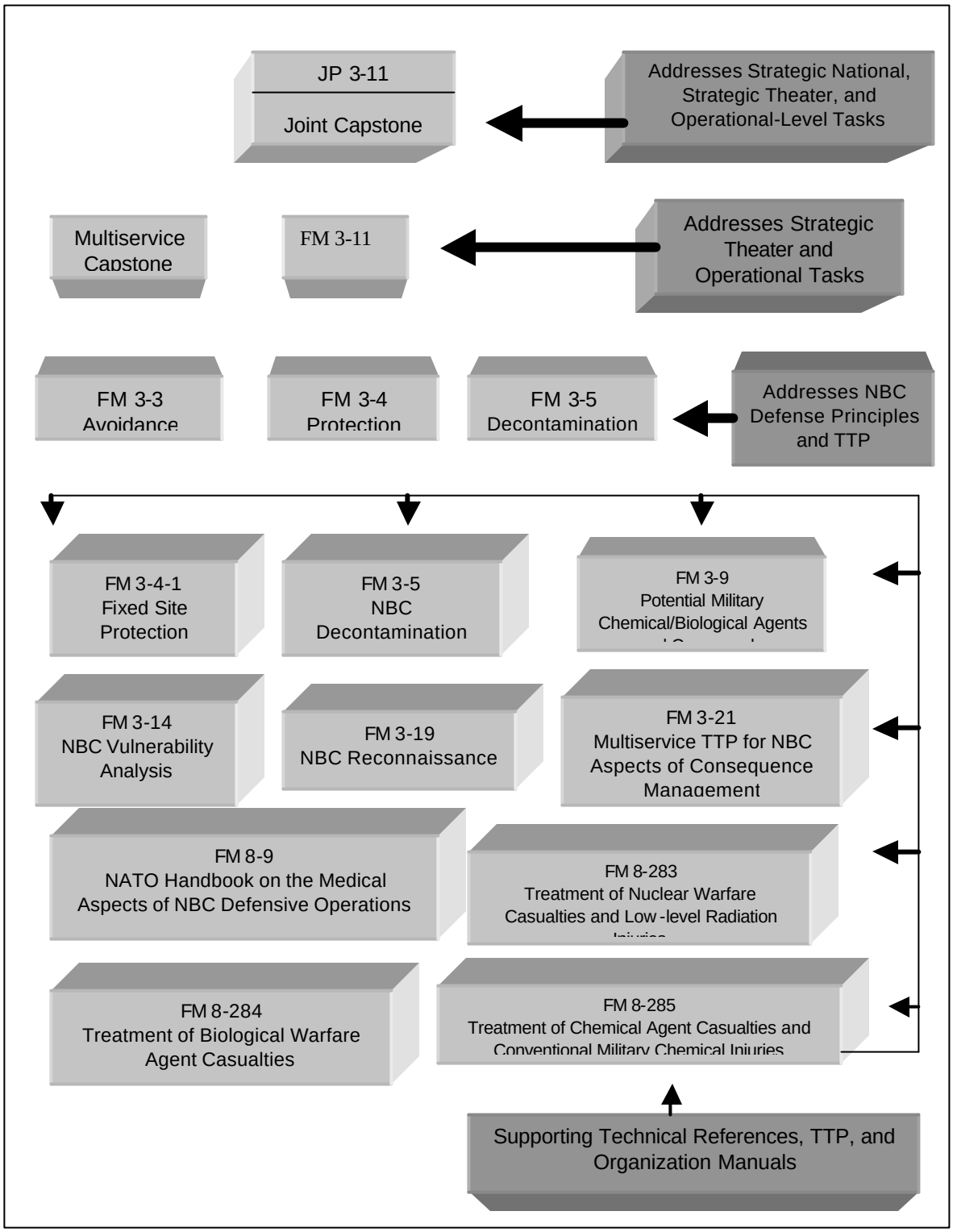


Figure F-1. NBC Doctrine Hierarchy

Appendix G

Basic Standards of Proficiency

This appendix addresses the levels of proficiency for NBC defense personnel and provides a recommended organization for NBC defense. This section implements STANAG 2150, *NATO Standards of Proficiency for NBC defense*. Individuals must be trained in the concepts of NBC defense in order to survive under conditions of NBC attack and to make their contribution toward the survivability and operating proficiency of the unit in an NBC environment. Individual standards of proficiency are shown as survival and basic operating actions. Survival standards are those that the individual must master in order to survive NBC attacks. Basic operating standards are those which the individual must master in order to contribute to the continued operations of the unit as a whole under NBC conditions.

SECTION I – INDIVIDUAL PROTECTION

Individuals should normally receive initial NBC defense training on entering military service and receive refresher training at regular intervals thereafter.

SURVIVAL STANDARDS

1-1. To meet survival standards of proficiency in NBC defense, the individual must be able to—

- Recognize attacks with NBC munitions and take protective action.
- Recognize NBC alarms and signals.
- Recognize the existence of biological, chemical, and radiological hazards and take protective action.
- Properly don, seat, clear, and check protective mask within nine seconds and complete the adjustment/attachment of the hood, if available, within six seconds for a total of 15 seconds following an alarm or recognition of a chemical or biological attack.
- Properly don protective clothing. In addition, the individual must be able to relate the use of protective clothing to the graduated levels of NBC threat described in Appendix E, and properly perform assigned missions.
- Take protective measures against thermal radiation (light, flash, and heat), blast wave, and radiation effects of nuclear explosions.
- Carry out immediate individual decontamination.

- Follow the procedures for the removal of NBC IPE.
- Recognize if casualties are contaminated and perform first aid (self-aid and buddy-aid).
- Practice good personal health and hygiene as a protective measure against the spread of disease.

BASIC OPERATING STANDARDS

1-2. To meet basic operating standards of proficiency under NBC conditions, the individual must be able to perform the survival standards listed above and master the following in order to contribute to the continued operations of the unit:

- Maintain his NBC IPE in a high state of serviceability at all times.
- Be proficient in taking specific actions required for maintaining operating efficiency before, during, and after NBC attacks in order to reduce the effects of NBC weapons.
- Recognize or detect NBC agent contamination and perform immediate decontamination of his person, clothing, personal equipment, individual weapon and position, vehicle and crew-served weapon.
- Recognize all standard marking signs that indicate chemically, biologically, or radiologically contaminated areas.
- Cross or bypass marked NBC contaminated areas with minimum danger to himself.
- Demonstrate proficiency in performing his primary military duty, to include the use of crew/personal weapon(s), while IPE for extended periods. These periods are to be determined by the commander, based on such factors as weather conditions and equipment specifications.
- Be familiar with the procedures to be followed at the decontamination facilities of his military service.
- Be familiar with the principles of CP, including entry and exit from CCAs and shelter organization and operation, where applicable.
- Demonstrate familiarity with the use of dosimetry devices and CB detection and monitoring equipment where applicable.
- Demonstrate the ability to perform the duties of an NBC observer.

BASIC STANDARDS OF PROFICIENCY FOR SELECTED PERSONNEL REQUIRING ADDITIONAL TRAINING

1-3. Personnel trained in NBC monitoring, survey, and reconnaissance should be able to—

- Operate and maintain NBC equipment applicable to the task.
- Recognize attacks with NBC munitions and fully understand unit procedures for implementing warnings and providing protection.
- Detect and identify contamination and organize and conduct NBC monitoring and survey operations.

- Monitor personnel, food, drinking water, and equipment for NBC contamination and effectiveness of decontamination measures.
- Collect samples of suspected biological contamination and forward them as directed.
- Collect samples of liquid or solid chemical agents.
- Mark NBC contaminated areas, equipment, supplies, and stores with standard marking signs.
- Provide data for compilation of NBC reports.
- Operate detection and survey equipment for recognizing and detecting hazards from radiological, biological, and chemical releases.

1-4. Personnel trained in contamination control should be able to—

- Perform necessary decontamination of supplies, equipment, and areas for which they are responsible in the performance of their primary duties.
- Operate and maintain assigned decontamination equipment.
- Where applicable, establish and operate a personnel decontamination station.
- Take measures before an attack to prevent contamination and after an attack to avoid the spread of contamination.

1-5. In addition to the basic standards of proficiency for individual service personnel, all officers and NCOs should have knowledge (appropriate to their rank and operational role) of—

- Deployment of NBC observers and detection devices.
- NBC monitoring, survey and reconnaissance.
- Survival procedures before, during, and after an NBC attack and friendly nuclear strike.
- Radiological, biological, and chemical downwind hazards.
- Radiation dose control, exposure rules, and record keeping.
- General protective values of material against radiation, including the selection of buildings and the construction of shelters.
- Contamination control procedures for the permanent or temporary prevention, reduction, or neutralization of contamination for maintaining or strengthening an efficient conduct of operations.

SECTION II – BASIC STANDARDS OF PROFICIENCY FOR NBC DEFENSE SPECIALIST

Officers and enlisted personnel whose primary duties are concerned with unit NBC defense activities are required to receive formal training beyond the scope outlined in Section I. NBC Defense Specialists are command NBC defense officers and enlisted personnel and unit NBC defense officers and enlisted personnel. Command NBC defense officers and enlisted personnel are those who

are assigned full time duties for NBC defense. Unit NBC defense officers and enlisted personnel are those who are assigned an additional duty to form the NBC control party. These personnel can be at the same level of company (or equivalent) but may be at a higher level, depending on a service's organizational structure.

2-1. Command NBC defense officers and enlisted personnel in cooperation with the functional groups of the staff, as necessary, must be able to—

- Assist the commander in providing policy and guidance to lower echelons in all matters pertaining to the development of an NBC defense capability.
- Plan, conduct, and monitor NBC defense training within the command.
- Evaluate the capability of lower echelons to survive an NBC attack and to continue operations in an NBC environment.
- Keep abreast of new TTP in NBC defense.
- In case of operation, act in the capacity of adviser to the commander on all matters pertaining to the NBC defense of subordinate units/formations. In addition, augmented as necessary, be responsible for the NBCWRS .
- Recommend employment of special NBC defense elements/units, if available.
- Where appropriate, operate and use automated systems for calculations and data processing. If an automated system is not available, personnel in NBC centers must be able to perform the same tasks manually.
- Act as adviser to the commander on all matters pertaining to cooperation in NBC defense with units/agencies of other nations.

2-2. Unit NBC defense officers and enlisted personnel (assisted by enlisted alternates) must be able to—

- Provide technical assistance to the commanders and staff on NBC defense training and operations.
- Coordinate the unit's NBC defense activities.
- Provide NBC defense training to achieve basic operating standards of proficiency for the unit and the individuals of the unit.
- Plan and supervise NBC defense training aspects of operational training exercises and maneuvers.
- Supervise preparation of unit NBC defense SOPs and adapt them to existing plans of other units (national/international) as required.
- Supervise operations and maintenance of NBC material.
- Determine by dosimetry or by calculation (as appropriate) total dose, time of stay in, and/or transit through radiologically contaminated areas to avoid exceeding command exposure guidance.
- Prepare fallout prediction patterns and perform the tasks of the NBCWRS (may be assigned to meteorological, operational, and navigational officers in naval forces/air forces).

- Plan NBC reconnaissance and advise commanders on best routes to cross or bypass an NBC contaminated area.
- Plan and coordinate decontamination within the unit and advise commander.
- Maintain records of unit radiation exposure.
- Estimate downwind hazard for chemical attacks.
- Report NBC data to next higher headquarters and perform the NBC reporting and warning tasks.
- Report NBC data to next higher headquarters and perform the NBC reporting and warning tasks.
- Evaluate individual and unit competence in NBC defense and advise the commander on the unit's ability to survive and to continue operations in an NBC environment.
- Where appropriate, operate and use data processing devices and possess basic knowledge of the structure of programs used in NBC warning and reporting.

2-3. Additionally, all NBC defense officers must be able to—

- Identify the hazards related to risks of LLR, release other than attack (ROTA), and TIM.
- Make contingency plans for units facing LLR, ROTA, and TIM hazards.
- Act as adviser to the commander on all matters pertaining to LLR, ROTA and TIM hazards.

SECTION III – BASIC STANDARDS OF PROFICIENCY FOR COMMANDERS

Commanders are required to have knowledge and competence in NBC defense beyond the scope of that demonstrated by each individual, but not to the degree required by NBC defense specialists.

3-1. Commanders should—

- Understand the principles of NBC defense.
- Know the defense organization and the NBCDE available.
- Assess the capabilities of the NBC defense forces under their command.
- Assess the effects of NBC munitions on his unit/formation especially on operations to be conducted.
- Issue orders and take measures depending on situation and mission.
- Plan operations taking into account the NBC threat and the readiness of units for operations in an NBC environment.
- Estimate the effects of wearing NBC IPE for an extended period of time and understand what measures can be taken to mitigate those effects on the combat effectiveness and well being of their forces.
- Be familiar with the available medical prophylactic countermeasures.

- Be familiar with integration of NBC training in exercises.

3-2. All commanders should also consider risks of—

- Low-Level Radiation.
- Release Other Than Attack.
- Toxic Industrial Materials.

SECTION IV – BASIC STANDARDS OF PROFICIENCY FOR CIVILIANS

Nations must identify those civilian personnel considered mission essential for the continuance of military operations in an NBC environment and ensure that they are trained and equipped to survive and function in such environments. Personnel in this category can include government employees from US agencies and government contractor personnel.

4-1. Appropriate standards of proficiency for civilians to function in an NBC environment include the following:

- Recognize attacks with NBC munitions and take protective action.
- Recognize NBC alarms and signals.
- Recognize the existence of biological, chemical, and radiological hazards and take protective action.
- Properly don, seat, clear and check his respirator/protective mask within nine seconds. Complete the adjustment/attachment of the hood, if available, within six seconds for a total of 15 seconds following an alarm or recognition of a chemical or biological attack.
- Properly don protective clothing. In addition, the individual must be able to relate the use of protective clothing to the graduated levels of NBC threat and properly perform assigned missions.
- Take protective measures against thermal radiation (light, flash, and heat), blast wave, and nuclear radiation effects of nuclear explosions.
- Carry out immediate individual decontamination skills.
- Follow the procedures for the removal of NBC IPE.
- Recognize if casualties are contaminated and perform first aid (self-aid and buddy-aid).
- Practice good personal health and hygiene as a protective measure against the spread of disease.

BASIC OPERATING STANDARDS

4-2. To meet basic operating standards of proficiency in NBC defense, civilians must be able to perform the survival standards listed above and—

- Maintain hisNBC IPE in a high state of serviceability at all times.

- Be proficient in taking specific actions required for maintaining operating efficiency before, during, and after NBC attacks in order to reduce the effects of NBC weapons.
- Recognize or detect chemical agent contamination and perform immediate decontamination of his person, clothing, personal equipment, individual weapon and position, vehicle and crew-served weapon.
- Recognize all standard marking signs that indicate chemically, biologically, or radiologically contaminated areas.
- Cross or bypass marked NBC contaminated areas with minimum danger to himself.
- Demonstrate proficiency in performing his primary duty while wearing IPE for extended periods. These periods are to be determined by a supervisor, based on such factors as weather conditions and equipment specifications.
- Be familiar with the procedures to be followed at the decontamination facilities at his operating base.
- Be familiar with the principles of CP, including entry and exit from CCAs, and shelter organization and operation, where applicable.
- Demonstrate familiarity with the use of dosimetric devices and CB detection and monitoring equipment where applicable.
- Demonstrate the ability to perform the duties of an NBC sentry/observer.

SECTION V – BASIC STANDARDS OF PROFICIENCY FOR MEDICAL PERSONNEL

Medical personnel should be able to protect themselves, patients, and the respective medical facilities against exposure to NBC agents (NBC defense) and carry out all measures necessary to maintain and restore the health of personnel exposed to NBC environments (NBC medical defense).

5-1. In addition to being proficient in training standards of survival and basic operating standards which apply to medical personnel according to their rank and function, the following basic skills are required of medical personnel:

- Be able to effectively protect casualties in an NBC situation during first aid, triage, resuscitative and emergency treatment, holding, evacuation, and hospital treatment.
- Be able to act in a way that medical materiel, vehicles, and medical facilities are provided protection against NBC hazards.
- Be familiar with fielded CP systems for facilities and vehicles, if appropriate.
- Know acute symptoms of NBC injuries and specific countermeasures as well as their potential side effects.
- Know decontamination procedures for NBC contaminated patients.

5-2. Selected medical personnel should also have specialized knowledge in contamination control procedures for NBC contaminated patients and associated equipment (i.e., RADIAC monitor and CAM).

5-3. Medical personnel assigned to perform special NBC medical defense tasks during missions (e.g. anesthesiologists, surgeons, internists, microbiologists, and food chemists) should have task-oriented, specialized knowledge of diagnosis and treatment of NBC injuries and of the detection and identification of CB agents and radiation.

5-4. Staff and command surgeons provide assessments to the commander on—

- Scientific background involving the acute and long-term health effects of NBC/TIM hazards.
- Preparation for an operation to include establishment of an inventory of NBC/TIM hazards and infectious endemic diseases.
- During an operation, coordinate the investigations of unusual sickness and fatalities in situations involving NBC/TIM hazards and endemic diseases.
- After-operation advice on postconflict surveillance.

SECTION VI – SURVIVAL AND UNIT BASIC OPERATING STANDARDS

Each unit must develop and maintain a capability for the successful accomplishment of its mission in an NBC environment. Planning and training for this capability will include preparation of a unit NBC SOP and frequent exercises to ensure familiarity in application of the SOP. Unit standards of proficiency are shown as “survival” and “basic operating standards.”

6-1. In order to survive an NBC attack; a unit must be able to—

- Take immediate and correct action upon warning of an imminent NBC attack, or arrival of a CB agent or radiological fallout.
- Determine the presence and nature of NBC hazards in the unit's area and take effective measures to mitigate, to the extent possible, the effects of NBC attack.
- Properly use unit NBC protective equipment and supplies and maintain them in a high state of serviceability and readiness.
- Enforce a high order of health, hygiene, and sanitation to minimize the spread of disease following a biological attack.

BASIC OPERATING STANDARDS

6-2. In order to meet basic operating standards of proficiency, the unit must be able to perform the survival standards listed above and—

- Maintain a degree of protection appropriate to the risk while continuing to conduct the primary mission of the unit.
- Perform necessary decontamination of supplies, equipment, and areas for which they are responsible in the performance of their primary duties.

- Delineate the areas of NBC hazard.
- Delineate contaminated areas and mark them by using standard signs.
- Cross, bypass, or function in contaminated areas with minimum loss of efficiency, decontaminating where necessary.
- Operate efficiently over an extended period of time (to be determined by the commander based on such factors as weather conditions and equipment specifications) with personnel in full protective equipment, including wearing of the protective mask.
- Report nuclear detonations, CB attacks, and associated hazards, hazard areas, and ROTAs.
- Assign NBC personnel based on standards of proficiency outlined in Sections II and III.

SECTION VII – GUIDE TO ORGANIZATION FOR NBC DEFENSE

The organization which best meets the need of one unit/organization will often not be applicable to another unit/formation. For example, it is not possible to equate the organization of personnel and material for decontamination tasks on a ship with the organization required on an airbase or within an infantry company. Similarly, a highly mobile infantry force will have different priorities for NBC defense than an air-operating base or naval vessel. Further, the following basic guidance applies when organizing for NBC defense operations.

7-1. The lowest level of unit which may be required to function as an independent entity should have an independent capability for survival.

7-2. Higher units/formations should have the capability of independently adopting their own NBC defense measures and performing their missions. In addition, they may have the capability of rendering support to smaller units to enable operations to continue.

7-3. The designation of specific personnel to specific responsibilities in the area of unit NBC defense must be accomplished. However, the normal command and staff structure should be followed to ensure that NBC defense is thoroughly integrated into the unit SOPs.

7-4. Regardless of the size or mission of the unit, tasks essential to NBC defense remain the same and differ only to a certain extent. The principles of NBC defense are avoidance, protection, and decontamination.

7-5. Priorities for execution of NBC defense measures in an actual NBC environment should be decided upon by the commander, bearing in mind the primary mission of the unit and the time, personnel, and material available to mitigate the effects of the NBC attack.

7-6. The functioning of the NBC defense organization of a unit/formation must be evaluated by the responsible commander in accordance with the guidelines laid down in applicable references.

7-7. All headquarters must meet the requirements of NBCWRS regarding NBCCs and NBC collection/subcollection centers.

7-8. Reaction forces are required to be self-sustaining in NBC defense. Reaction forces should have sufficient NBC defense assets to conduct NBC reconnaissance, survey and monitoring, decontamination, and contamination control.

SECTION VIII – SUGGESTED NBC DEFENSE ORGANIZATION—LAND FORCES AND AIR FORCES

Commanders of companies or equivalent-sized units which do not have assigned NBC specialists should appoint on an additional-duty basis one NBC defense officer/NBC defense NCO and one enlisted NCO (assisted by one enlisted man). These personnel form the NBC control party and will perform the functions outlined in Section II.

8-1. Commanders also assign personnel to maintain a capability to conduct monitoring and survey and decontamination, specifically—

- Monitoring and survey team—each team should consist of a primary instrument operator and an assistant.
- Decontamination team—each team should consist of one NCO in charge and several other enlisted men, including a monitoring and survey party. They perform the functions outlined in Section II.

8-2. Battalion or equivalent headquarters which are not assigned an organic NBC defense officer should appoint an NBC defense officer on an additional-duty basis. Those headquarters which are not assigned an organic NBC defense NCO should also appoint an additional-duty NBC defense NCO and one enlisted alternate. These personnel will form the NBC control party and should be augmented, as necessary, to enable NBC warning and reporting.

8-3. Additionally, commanders of fixed installations can be guided by the NBC organization shown for Air Forces (see Section IX).

SECTION IX – SUGGESTED NBC ORGANIZATION—NAVAL

Defense of a ship's company against NBC effects can be provided by the citadel (gas-tight envelope) concept; however, vessels without citadels can improvise by sealing off parts of the ship to provide a limited contamination-free area.

9-1. Ship's personnel receive training in individual and collective NBC defense procedures. Specifically trained personnel perform the functions outlined in Section II.

9-2. Commanders also assign sufficient personnel to use available detection devices and interpret the information provided by the devices.

9-3. Further, contamination control systems such as water washdown systems may be available, and commanders assign an appropriate number of decontamination parties. The number of parties required will normally be dictated by the size of the ship.

9-4. Additionally, commanders of naval aviation forces and naval shore installations can be guided by the NBC organizations shown in Section IX.

Appendix H

NBC THREAT CONDITIONS

The US armed forces, our civilian population, and our allies must contend with an NBC and TIM threat that is global across the range of military operations. The proliferation of NBC-capable nations in all contingency regions and the availability of TIM present additional hazard conditions, thereby increasing the likelihood of US forces being direct or inadvertent targets of attack. These attacks may range from limited use in MOOTW to planned targeting in support of military operations. As part of the threat assessment, the NBC staff (in coordination with intelligence and operations officers) can provide recommendations to the commander. The assessment could come in the form of a recommendation to increase a unit's NBC defense posture and the NBC threat status assessment process described below provides a tool that outlines suggested actions that could be undertaken to implement increased unit readiness.

NBC THREAT STATUS (STANAG 2984)

1-1. US forces may not have to carry NBCDE (such as MOPP) based on the initial threat estimate. If the threat condition were to change and indicators were present to suggest the possible use of NBC agents by the threat forces, NBCDE would be deployed forward (such as forward air operating base or division support area/brigade support area). These stocks may be prepalletized for immediate deployment by aircraft to the affected unit if required. However, this decision must be made based on available aircraft or other transportation systems. This could be done so the forces would not have to carry the MOPP ensemble. The minimum NBC threat status can be set at MSC (i.e., division/separate brigade, group, wing, etc.) and is a flexible system determined by the most current enemy situation, as depicted by the continuously updated IPB process. This allows commanders to increase the threat status as conditions change in their AO. However, the procedure used within the AO remains consistent with key reference documents such as OPLANS, standing orders, combatant commander's guidance, SOPs, etc. Threat status governs the initial deployment of NBC assets (such as equipment or units) and the positioning of those assets in the operational area. The NBC threat status serial numbers are for planning purposes in accordance with STANAG 2984. These numbers, however, may be substituted for a color code (example colors could include serial 1 = white, serial 2 = yellow, serial 3 = red, serial 4 = black). It does, however, require NBC personnel to stay abreast of the intelligence situation. The NBC threat status is outlined in paragraphs 1-2 through 1-5.

SERIAL 1

1-2. An adversary does not possess any NBCDE, is not trained in NBC defense or employment and does not possess the capability to employ NBC warfare agents or systems. Further, the adversary is not expected to gain access to such weapons, and if they were able to gain these weapons, it is considered highly unlikely that the weapons would be employed against US forces. Suggested guidance could include the following:

- Under this status a deploying force would not have to carry NBCDE nor decontamination assets. However, protective masks should be carried.
- NBC personnel should concentrate efforts on monitoring intelligence information for NBC threat indicators.

SERIAL 2

1-3. The adversary has an offensive NBC capability and has received training in defense and employment techniques, but their assessment is no indication of the use of NBC weapons in the immediate future. This indication may be based on whether NBC munitions are dispersed or deployed, or the stated objectives and intent of opposing forces. Unit actions may include the following:

- All personnel carry their individual defense equipment or CDE stockpiles are identified and would be readily available for deployment to the operational area if the threat status should increase.
- NBCRS deploy to the operational AOI to provide a monitoring capability.
- NBC personnel continue to concentrate their efforts on planning and analysis for threat indicators.

SERIAL 3

1-4. The adversary is equipped and trained in NBC defense and employment techniques. NBC weapons and employment systems are readily available. NBC weapons have been employed in other areas of the theater. Continued employment of NBC weapons is considered probable in the immediate future. Indicators could be: NBC munitions deployed to either field storage sites or firing units, enemy troops wearing or carrying protective equipment, NBC reconnaissance elements observed with conventional reconnaissance units, and/or NBC decontamination elements moved forward. Unit actions may include the following:

- Unit NBCDE should be both prepalletized and located forward for easy access or issued to the personnel responsible for use within the unit.
- Individuals should be at MOPP1 or MOPP2; MOPP 0, if MOPP gear is readily available.
- Units also erect CP shelters if the tactical situation permits. Personnel and equipment should be kept under cover as much as possible to protect them from contamination.
- CDMs should be sent to subordinate units.
- NBC defense units (decontamination and NBC reconnaissance assets should be deployed as part of the force structure.

- Detection and monitoring (such as CAM) equipment should be issued to the operators.
- Unit should fill M11 and M13 DAP and mount on vehicles.

SERIAL 4

1-5. The adversary possesses NBC warfare agents and delivery systems. NBCDE is available and training status is considered at par or equal to that of the US. NBC weapons have already been employed in the theater and attack is considered imminent. Indicators are NBC attack in progress but not in your area of operation, NBC warnings/signals to enemy troops, NBC munitions delivered to firing units within range of friendly forces, and/or movement of surface-to-surface missiles to a launch site. Unit actions may include the following:

- US forces should deploy with NBCDE in the unit load.
- Personnel should either wear the overgarments or carry them in their ruck sacks or NBC bags.
- Personnel should also change protective mask filters prior to deployment.
- Decontamination and NBC reconnaissance assets should be task organized and responsive to commanders requirements. Contingency stocks of NBCDE may be made readily available (i.e., locate at battalion trains).
- CDMs are initiated and CP systems are placed into a state of readiness.

COMPLETING NBC THREAT STATUS MATRIX

1-6. This threat status can be assessed separately for nuclear (N), biological (B), or chemical (C) threats. For example: it would be possible to have a C status of three and a B status of zero. This threat status provides a decision tool that can be used to support CCIR.

1-7. Threat status can change rapidly. Although a C status of zero may exist during deployment, the adversary may seize TIM or obtain warfare agents from a sponsoring nation. Therefore, the commander must be capable of upgrading the NBC defense posture quickly.

1-8. To assist in the formulation of the threat status, the NBC staff (in conjunction with the intelligence section) must analyze all information received. A tool in this analysis is the threat status matrix depicted in Table H-1.

1-9. Use Xs to mark applicable boxes or degree of threat. Total columns and use the serial number with largest number of Xs as the current threat status.

1-10. More than one matrix may be necessary to determine the threat status for NBC attack.

1-11. To use the matrix, place an X in the appropriate block. Add each column. Whichever column has the most Xs provides a means to identify what threat status serial number could be used to identify an indication of the enemy force intent. If an overall threat status cannot be determined due to an information shortfall, collection assets should be reallocated or positioned to gain the needed information.

Table H-1. NBC Threat Status Matrix

CONDITIONS	SERIAL NUMBER			
	1	2	3	4
Enemy force information— • Training Status. • NBC equipment availability. • Wearing overgarments. • In CP shelters, in positions with overhead cover, or exposed.				
Enemy NBC policy and capabilities— • What is enemy's stated policy on NBC weapons employment? • Can enemy produce NBC weapons? • Has industrial output increased or changed for production of NBC munitions or protective equipment?				
NBC weapons systems— • Are weather and terrain favorable for NBC attack? • Have NBC weapons been used in theater? • Enemy decontamination/recon units forward? • Availability of NBC weapons? • NBC weapons moved to firing units (launch site)?				
Totals (circle current status).				

1-12. Once the threat status estimate has been assessed, the NBC staff must analyze the protection level required for friendly forces. This is accomplished by using MOPP analysis as discussed in FM 3-4 (key factors include analyzing mission, environment, and personnel factors) and the following factors:

- Understanding the mission and commander's intent for friendly forces.
- Capabilities and level of training of friendly forces.
- MOPP analysis and work degradation factors contained in FM 3-4.
- Availability of CDE and decontamination assets.
- Location and availability of desalinization plants (for arid areas).
- Location of civilian TIM manufacturing and storage facilities. TIM at these facilities may be used for commercial purposes. Further, TIM stored in these facilities may produce areas of contamination if storage containers leak (either intentional or unintentional).
- Availability of civilian-contracted labor and water transport for decontamination operations.

- For urban areas, location of car washes. These car washes may be used in lieu of hasty decontaminaion stations. Obtain data on local fire hydrants (such as location, hookups). Hydrants may be used to provide water for decontamination operations.

1-13. The NBC staff must carefully prepare the threat status and identify the protection level required for friendly forces to withstand an NBC attack ot TIM incident. This information is vital to the commander and for the successful accomplishment of the mission.

Appendix I

Air and Space Operations

EMPLOYING AIR AND SPACE POWER

1-1. Many of the Air Force's basic functions (see Figure I-1) are broad, fundamental, and continuing activities of air and space power. The Air Force can employ these battle-proven functions at any level of war or condition and enable the Air Force to shape and control the battle space.

Air & Space PowerFunctions
Counterair
Counterspace
Counterland
Strategic Attack
Counterinformation
Command and Control
Airlift
Special Operations Employment
Intelligence
Surveillance
Reconnaissance
Weather Services

Figure I-1. Selected Air and Space Power Functions

AIR AND SPACE POWER FUNCTIONS

COUNTERAIR

1-2. Counterair consists of operations to attain and maintain a desired degree of air superiority by the destruction or neutralization of enemy forces. Counterair's two elements—offensive counterair (OCA) and DCA—enable friendly use of otherwise contested airspace and disable the enemy's offensive air and missile capabilities (including WMD capability) to reduce the threat posed against friendly forces. OCA consists of operations to destroy, neutralize, disrupt, or limit enemy air and missile power as close to its source as possible and at a time and place of our choosing. DCA concentrates on defeating the enemy's offensive plan and on inflicting unacceptable losses on attacking enemy forces. DCA is synonymous with air defense and consists of active and passive operations to defend friendly airspace and protect friendly forces, materiel, and infrastructure from enemy WMD air and missile attack.

COUNTERSPACE

1-3. Counterspace could involve those operations conducted to detect, track, identify, intercept, and destroy or neutralize enemy space and missile forces with a WMD capability.

COUNTERLAND

1-4. Counterland involves those operations conducted to attain and maintain a desired degree of superiority over surface operations by the destruction or neutralization of enemy surface forces. Specific traditional functions associated with air and space counterland operations could include interdiction. Interdiction is a form of air maneuver; and could consist of operations to divert, disrupt, delay, or destroy the enemy's surface NBC military potential before it can be used effectively against friendly forces.

STRATEGIC ATTACK

1-5. Strategic attack includes those operations intended to directly achieve strategic effects by striking at the enemy's center of gravity (COG). These objectives could typically center on destruction or disruption of the enemy's COGs, which could be the characteristics, capabilities (i.e., WMD), or localities from which a force derived its freedom of action, physical strength, or will to fight. The adversary may be a large nation state with a highly sophisticated political, economic, and military structure or a nonstate terrorist group that relies on clandestine support. Regardless of the opponent, it is the operation's direct impact on assigned strategic objectives that is important. This function may be carried out in support of a JFC or as a stand-alone operation by direction of the NCA. Strategic attack may also be conducted against fielded forces. For example, strategic attack may be conducted against identified COGs such as major reserves or politically significant military formations, space launch and support elements, or forces used for strategic NBC attack.

COUNTERINFORMATION

1-6. Counterinformation seeks to establish information superiority through control of the information realm. Counterinformation creates an environment where friendly forces can conduct operations and maintain situational awareness. Counterinformation could include actions to jam radar and corrupt data acquisition, transformation, storage, or transmission of an adversary's information.

COMMAND AND CONTROL

1-7. C^2 includes both the process by which the commander decides what action is to be taken and the system which monitors the implementation of the decision.

AIRLIFT

1-8. Airlift is the transportation of personnel and materiel through the air and can be applied across the entire range of military operations. Situational awareness enables use of this power-projection capability to airlift supplies to contamination-free areas to get rapid-reaction forces to the point of a crisis with minimum delay. Airlift provides a strategic capability and the principle of

security requires that this capability be protected from the effects of WMD that could provide the enemy with an unexpected advantage.

SPECIAL OPERATIONS EMPLOYMENT

1-9. Special operations employment is the use of airpower operations (denied territory mobility, surgical firepower, and special tactics) to conduct action such as unconventional warfare, direct action, special reconnaissance, counterterrorism, foreign internal defense, PSYOP, and counterproliferation.

INTELLIGENCE

1-10. Intelligence provides situational awareness through clear, brief, relevant, and timely analysis of foreign capabilities and intentions for planning and conducting military operations. The overall objective of intelligence is to enable commanders and combat fores to "know the enemy" and operate smarter. It helps commanders across the range of military operations by collecting, analyzing, fusing, tailoring, and disseminating intelligence to the right place at the right time for key decision making. Intelligence provides indications of enemy intentions and guides decisions on how, when, and where to engage enemy forces to achieve the commander's objectives.

SURVEILLANCE

1-11. Surveillance is the function of systematically observing air, space, surface, or subsurface areas, places, persons, or things by visual, aural, electronic, photographic, or other means. In response to the requirements of military forces, surveillance is designed to provide warning of enemy initiatives and threats (i.e., WMD) and to detect changes in enemy activities. Air- and space-based surveillance assets exploit elevation to detect enemy initiatives at long range. For example, its extreme elevation makes space-based missile launch detection and tracking indispensable for defense against ballistic missile attack.

RECONNAISSANCE

1-12. Reconnaissance complements surveillance in obtaining (by visual observation or through use of NBC detection methods) specific information about the activities and resources of an enemy or potential enemy; or in securing data concerning the meteorological, hydrographic, or geographic characteristics (i.e., surface contamination) of a particular area. Reconnaissance generally has a time constraint associated with the tasking. ISR enables commanders to preserve forces, achieve economies, and accomplish campaign objectives. They are integral to gaining and maintaining information superiority.

WEATHER SERVICES

1-13. Weather services provided by the Air Force supply timely and accurate environmental information, including both space environment and atmospheric weather, to commanders for their objectives and plans at the strategic, operational, and tactical levels. Weather services also influence the selection of targets, routes, weapon system, and delivery tactics, and are a key element of information superiority.

Appendix J

Maritime Operations

In recent years, the potential for regional conflicts has increased. The possible sources include political, economic, and social instabilities; border disputes; ethnic; religious, and national tensions; competition for resources; ecological and population pressures; international power struggles; and terrorism. These problems are compounded in many regions by the amassing of conventional weaponry and the proliferation of WMD and their means of delivery. Maritime forces use methods and procedures by which the level of risk can be reduced.

RISK REDUCTION

1-1 Maritime forces can reduce the level of risk for a force constituted to operate during a crisis or war by considering the following:

EXERCISES

1-2. Exercises are a major means by which maritime forces can prepare and train their forces for operations in an NBC environment. Exercises can help to identify potential problem areas and foster cooperation among forces. Exercises can stress likely problem areas in an NBC environment, including command arrangements, logistics, and communications and tactical procedures.

FACILITIES

1-3. Assess the risk to maintenance and repair facilities of an NBC environment and prepare countermeasures or workarounds in potential high-threat regions.

HOME-PORTING AND FOREIGN-BASING AGREEMENTS

1-4. Based on existing agreements, conduct NBC vulnerability assessments and anticipate potential avoidance, protection, and decontamination requirements.

MUTUAL EXCHANGE AGREEMENTS AND MEMORANDA OF UNDERSTANDING

1-5. These agreements could allow the reciprocal exchange of technical information, equipment, and logistics information to support NBC defense operations between US maritime forces and an HN.

TRAINING

1-6. This is another key aspect for a maritime force preparing for operations in an NBC environment. Individual and collective training provide units the capacity to anticipate and resolve potential conflicts that could result from working in an NBC environment.

EQUIPMENT STANDARDIZATION PROGRAMS

1-7. Standardization and interoperability programs focus on commonality or interoperability between NBC defense operations afloat and ashore, or ships and ground combat systems.

CHARACTERISTICS OF MARITIME FORCES

1-8 The qualities that characterize maritime forces are readiness, flexibility, self-sustainability, and mobility. These same characteristics support the preparedness of maritime forces to operate in an NBC environment.

READINESS

1-9. One of the strengths of maritime forces lies in their immediate availability to respond to contingencies. By maintaining proficiency in the capabilities necessary to operate in an NBC environment, maritime forces can provide a wide range of services in support of peacetime operations.

FLEXIBILITY

1-10. The inherent flexibility of maritime forces permits political leaders and commanders to shift focus and reconfigure and realign forces quickly to handle a variety of contingencies. Maritime forces offer presence without occupation and deterrence without commitment. They represent a worldwide, balanced, survivable, and autonomous intervention capability, which may be employed nationally or multinationally.

SELF-SUSTAINMENT

1-11. Maritime forces are capable of operating in forward areas at the end of long supply lines without a significant, more vulnerable land-based supply structure.

MOBILITY

1-12. With strategic, operational, and tactical mobility, maritime forces have the ability to monitor a situation passively, remain on station for a sustained period, respond to a crisis rapidly, and deploy in combat with authority. Mobility enables maritime forces to use avoidance and respond from over the horizon, becoming selectively visible and threatening to adversaries as needed.

OPERATIONS IN PEACETIME

1-13 Maritime forces lend themselves well to support various peacetime operations. Although in some situations peacetime operations are designed to influence governments and military forces (presence and deterrence), they can also be used to influence nonnational entities such as criminal organizations and transnational groups. In some contingencies, maritime forces may operate more in a supporting or enabling role, contributing a supply of well-trained and equipped personnel who can adapt and sustain themselves. Peacetime operations will normally have a varying mix of security, humanitarian, and environmental components. Examples of peacetime operations are discussed in paragraphs 1-14 through 1-20.

PRESENCE AND DETERRENCE

1-14. The presence of maritime forces can avoid confrontation and support political aims without necessarily violating national sovereignty. Maritime forces may strengthen diplomatic efforts by "showing the flag" in a benign fashion as a general indicator of interest and latent capability, thereby helping to prevent emerging conflicts. Alternately, maritime forces can be deployed as a deterrent against specific actions.

PEACE OPERATIONS

1-15. The use of maritime forces in peace operations will usually complement land forces and may involve a considerable range of tasks. These tasks could include monitoring/observing cease-fires or interposition between the maritime forces of belligerents.

PROTECTION OF SHIPPING AND FREEDOM OF NAVIGATION

1-16. When nations make claims over waters that are contested, maritime forces may also protect merchant shipping with flag-state consent that could otherwise be threatened.

MARITIME CONSTABULARY TASKS

1-17. These functions are likely to involve naval forces as well as coast guards and/or civilian maritime agencies. Specific functions may include—

- Operations against piracy.
- Counterterrorism.
- Interdiction of NBC weapons and other contraband trade.

ENVIRONMENTAL OPERATIONS

1-18. Maritime forces may also be tasked to respond to TIM releases or other environmental disasters. In these cases, maritime forces can be a valuable source of trained and disciplined personnel as well as equipment. Often these operations will be conducted in concert with or in support of other governmental, international, or private agencies whose specific missions include disaster response.

EMBARGOES/MARITIME INTERDICTION OPERATIONS

1-19. Maritime forces may be tasked to enforce internationally imposed sanctions. Effective enforcement of actions such as arms control sanctions may require sophisticated coordination of military operations at sea and in the air.

NONCOMBATANT EVACUATION OPERATIONS

1-20. NEO are conducted to move personnel out of an area where deteriorating security conditions (with a potential NBC threat) can place lives at risk.

OPERATIONS IN WARTIME

1-21 In wartime, the activities of the maritime force are normally aimed at achieving sea control and projecting power ashore.

SEA CONTROL

1-22. Use of the sea requires a degree of control. Total sea control is rarely possible as long as an adversary continues to threaten forces in the area with capabilities that could include NBC weapons. Sea control must provide security for forces, facilities, and sea LOCs.

POWER PROJECTION

1-23. Conflicts at sea rarely exist in isolation from a land campaign or the pursuit of territorial objectives. Even when the maritime component is operationally dominant, the ultimate outcome in the theater is likely to depend on success ashore. Maritime forces often must be prepared to operate in the littoral environment to project force ashore as part of joint operations involving naval, air, and land forces. Naval forces are normally the first forces into a crisis area and may form the enabling force that allows a joint force access to the region.

Glossary

ACADA	automatic chemical agent detection and alarm
ACC	air component command
ACCP	Air Combat Command Publication
ACE	air combat element
ACR	armored cavalry regiment
aerosol	A liquid or solid composed of finely divided particles suspended in a gaseous medium. Examples of common aerosols are mist, fog, and smoke.
AFDD	Air Force Doctrine Directive
AFH	Air Force Handbook
AFI	Air Force Instruction
AFM	Air Force Manual
AFMAN	Air Force Manual
AFPAM	Air Force Pamphlet
AFTTP	Air Force tactics, techniques, and procedures
agent	See **biological agent** or **chemical agent**.
AO	area of operations
AOI	area of interest
AOR	area of responsibility
APOD	airport of debarkation
APOE	airport of embarkation
ATP	Allied Tactical Publication
avoidance	Individual and/or unit measures taken to avoid or minimize nuclear, biological, and chemical (NBC) attacks and reduce the effects of NBC hazards. Avoidance involves the passive and active measures employed to avoid NBC attack and subsequent contamination. Passive measures include training, camouflage and concealment, hardened positions, and dispersion. Active avoidance measures include contamination detection, marking, alarms, warning, reporting, and control measures.
BCE	base civil engineer
BCOC	base cluster operations center
BDOC	base defense operations center

BIDS	Biological Integrated Detection System
biological agent	A microorganism that causes disease in personnel, plants, or animals or causes the deterioration of material.
biological defense	The methods, plans, and procedures involved in establishing and executing defensive measures against attacks using biological agents. (JP 1-02)
biological operation	Employment of biological agents to produce casualties in personnel or animals and damage to plants or materiel; or defense against such employment. (JP 1-02)
biological threat	A threat that consists of biological material planned to be deployed to produce casualties in personnel or animals and damage plants or other materiel. (JP 1-02)
biological warfare	The use (for military purposes) of living organisms or materials derived from them to cause disease in man, plants, or animals or cause the deterioration of material. (JP 1-02)
biological weapon	An item of material which projects, disperses, or disseminates a biological agent including arthropod vectors. (JP 1-02)
BW	biological warfare
BWC	Biological Weapons Convention
blister agent	A chemical agent which injures the eyes and lungs and burns or blisters the skin. Also called vesicant agent. (JP 1-02)
blood agent	A chemical compound, including the cyanide group, that affects bodily functions by preventing the normal utilization of oxygen by body tissues. (JP 1-02)
C^2	command and control
C^4I	command, control, communications, computers, and intelligence
CAIRA	chemical accident incident response assistance
CAM	chemical agent monitor
campaign	A series of related military operations aimed at accomplishing a strategic or operational objective within a given time and space. (JP 1-02)
CAPDS	Chemical Agent Point Detection System
CB	chemical biological
CBIRF	Chemical Biological Incident Response Force
CB-RRT	Chemical Biological-Rapid Response Team
CCA	contamination control area
CCIR	commander's critical information requirements
CCT	contamination control team
CDM	chemical downwind message

CE communications-electronics

chemical agent A chemical substance intended for use in military operations to kill, seriously injure, or incapacitate personnel through its physiological effects. The term excludes riot control agents, herbicides, smoke, and flame. (JP 1-02)

chemical agent casualty A person who has been affected sufficiently by a chemical agent to prevent or seriously degrade his or her ability to carry out the mission. (JP 1-02)

chemical agent cumulative action The building up within the human body of small ineffective doses of certain chemical agents to a point where eventual effect is similar to one large dose. (JP 1-02)

chemical agent symbol The military code designation for a chemical agent; normally, a combination of one to three letters or letter and number combinations. Should not be confused with the chemical formula. (JP 1-02)

chemical ammunition A type of ammunition, the filler of which is primarily a chemical agent. (JP 1-02)

chemical defense The methods, plans, and procedures involved in establishing and executing defensive measures against attacks utilizing chemical agents. See also **nuclear, biological, and chemical defense**. (JP 1-02)

chemical dose The amount of chemical agent (expressed in milligrams) that is taken or absorbed by the body. (JP 1-02)

chemical environment Conditions found in an area resulting from direct or persisting effects of chemical weapons. (JP 1-02)

chemical event Chemical accidents resulting from nondeliberate events where safety is a primary concern or deliberate events such as terrorism where security is a concern. (JP 1-02)

chemical monitoring The continued or periodic process of determining whether or not a chemical agent is present. (JP 1-02)

chemical operations Employment of chemical agents to kill, injure, or incapacitate personnel or animals for a significant period time and deny or hinder the use of areas, facilities, or material; or defense against such employment. (JP 1-02)

chemical survey The directed effort to determine the nature and degree of chemical hazard in an area and to delineate the perimeter of the hazard. (JP 1-02)

chemical warfare All aspects of military operations involving the employment of lethal and incapacitating munitions/agents and the warning and protective measures associated with such offensive operations. Since riot control agents and herbicides are not considered to be chemical warfare agents, those two items will be referred to separately or under the broader term “chemical,” which will be used to include all

types of chemical munitions/agents collectively. The term "chemical warfare weapons" may be used when it is desired to reflect both lethal and incapacitating munitions/agents of either chemical or biological origin. (JP 1-02)

chemical weapon An item of material that projects, either together or separately, toxic chemical agents, chemical agent precursors, or chemical munitions; and any equipment specifically designed to use directly with the employment of chemical agents and munitions. These include material and other items not prohibited by the provisions of the Convention on the Prohibition of the Development, Production, Stockpiling, and Use of Chemical Weapons and on Their Destruction, also known as the Chemical Weapons Convention. (JP 1-02)

CI civilian internee

CLS contract logistics support

CO commanding officer

COA course of action

COCOM combatant command

COG center of gravity

collective nuclear, biological, and chemical protection

Protection provided to a group of individuals in a nuclear, biological, and chemical environment which permits relaxation of individual nuclear, biological, and chemical protection. (JP 1-02)

collective protection The use of shelters to provide a contamination-free environment for selected portions of the force such as command and control elements.

collective protection shelter

A filtered air shelter that provides a contamination-free working environment for selected personnel and allows relief from continuous wear of mission-oriented protective posture gear.

combatant command (1) A unified or specified command with a broad continuing mission under a single commander established and so designated by the President through the Secretary of Defense and with the advice and assistance of the Chairman of the Joint Chiefs of Staff. Combatant commands typically have geographic or functional responsibilities. (JP 1-02)

combatant command (2) Nontransferable command authority established by Title 10 ("Armed Forces"), United States Code, Section 164, exercised only by commanders of unified or specified combatant commands unless otherwise directed by the President or the Secretary of Defense. Combatant command cannot be delegated and is the authority of a combatant commander to perform those functions of command over assigned forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving

	authoritative direction over all aspects of military operations, joint training, and logistics necessary to accomplish the missions assigned to the command. Combatant command should be exercised through the commanders of subordinate organizations. Normally this authority is exercised through subordinate joint force commanders and service and/or functional component commanders. Combatant command provides full authority to organize and employ commands and forces as the combatant commander considers necessary to accomplish assigned missions. Operational control is inherent in combatant command . (JP 1-02)
combatant commander	A commander in chief of one of the unified or specified combatant commands established by the President. (JP 1-02)
COMMZ	communications zone
contaminate	To introduce an impurity. Clothing or equipment exposed to a chemical agent is considered contaminated.
contaminated remains	Remains of personnel which have absorbed or upon which have been deposited radioactive material or biological or chemical agents. (JP 1-02)
contamination	(1) The deposit, absorption, or adsorption of radioactive material or biological or chemical agents on or by structures, areas, personnel, or objects. (2) Food and/or water made unfit for consumption by humans or animals because of the presence of environmental chemicals, radioactive elements, bacteria or organisms, the byproduct of the growth of bacteria or organisms, the decomposing material (to include food substance itself), or waste in the food or water. (JP 1-02)
contamination control	Procedures to avoid, reduce, remove, or render harmless, temporarily or permanently, nuclear, biological, and chemical contamination for the purpose of maintaining or enhancing the efficient conduct of military operations. (JP 1-02)
CONUS	continental United States
CP	collective protection
CPE	collective protection equipment
CPO	chemical protective overgarment
CSSE	combat service support element
CTP	common tactical picture
CW	chemical warfare
CWC	Chemical Weapons Convention
DAL	defended assets list
DAP	decontamination apparatus, portable
DCA	defensive counterair
DCC	damage control center

DCO	damage control officer
decontamination	The process of making any person, object, or area safe by absorbing, destroying, neutralizing, making harmless, or removing chemical or biological agents, or by removing radioactive material clinging to or around it. (JP 1-02)
decontamination station	A building or location suitably equipped and organized where personnel and material are cleansed of chemical, biological, or radiological contaminants. (JP 1-02)
DED	detailed equipment decontamination
detection	In nuclear, biological, and chemical (NBC) environments, the act of locating NBC hazards by use of chemical detectors or monitoring and/or survey teams.
dispersion	The dissemination of agents in liquid or aerosol form. (JP 1-02)
doctrine	Fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives. It is authoritative, but requires judgment in applications. (JP 1-02)
DOD	Department of Defense
DODD	Department of Defense Directive
DODI	Department of Defense Instruction
DP	disaster preparedness
DS	direct support
DU	Depleted Uranium
EMP	electromagnetic pulse
ENGR	engineer
EOD	explosive ordnance disposal
EPW	enemy prisoner of war
FDO	flexible deterrent option
FEMA	Federal Emergency Management Agency
FM	field manual
FMFM	Fleet Marine Force Manual
FMFRP	Fleet Marine Force Reference Publication
FOF	follow-on force
FRP	Federal Response Plan
FSE	fire support element
FSSG	force service support group
FTX	field training exercise
gal	gallon

GCE ground combat element

GI&S geospatial information and services

gpm gallons per minute

GS general support

H&S headquarters and service

HDC harbor defense commander

herbicide A chemical compound that will kill or damage plants. (JP 1-02)

HHC headquarters and headquarters company

HMMWV high mobility multipurpose wheel vehicle

HN host nation

host nation support Civil and/or military assistance rendered by a nation to foreign forces within its territory during peacetime, crises, or emergencies, or war based on agreements mutually concluded between nations. (JP 1-02)

HSS health service support

ICS incident command system

identification Process of positively identifying field concentrations of nuclear, biological, and chemical agents using detection equipment.

IM information management

immediate decontamination Decontamination carried out by individuals immediately upon becoming contaminated. It is performed in an effort to minimize casualties, save lives, and limit the spread of contamination. Also called emergency decontamination.

improvised nuclear device A device incorporating radioactive materials designed to result in the dispersal of radioactive material or in the formation of nuclear-yield reaction. Such devices may be fabricated in a completely improvised manner or may be an improvised modification to a United States or foreign nuclear weapon. (JP 1-02)

individual protection Actions taken by individuals to survive and continue the mission under nuclear, biological, and chemical conditions.

individual protective equipment In nuclear, biological, and chemical warfare, the personal clothing and equipment required to protect an individual from biological and chemical hazards and some nuclear effects. (JP 1-02)

industrial chemicals Chemicals developed or manufactured for use in industrial operations or research by industry, government, or academia. These chemicals are not primarily manufactured for the specific purpose of producing human casualties or rendering equipment, facilities, or areas dangerous for human use. Hydrogen cyanide, cyanogen

	chloride, phosgene, and chloropicrin are industrial chemicals that also can be military chemical agents. (JP 1-02)
IO	information operations, international organization
IPB	intelligence preparation of the battle space
IPE	individual protective equipment
IRF	initial response force
ISR	intelligence, surveillance, and reconnaissance
JFC	joint force commander
JIC	Joint Intelligence Center
JMAO	Joint Mortuary Affairs Office
JMET	joint mission-essential task
JMETL	joint mission-essential task lists
JOA	joint operations area
joint	Connotes activities, operations, organizations, etc. in which elements of two or more military departments participate. (JP 1-02)
joint force commander	A general term applied to a combatant commander, subunified commander, or joint task force commander authorized to exercise combatant command or operational control over a joint force. (JP 1-02)
JP	joint publication
JRA	joint rear area
JRAC	joint rear area coordinator
JSCP	Joint Strategic Capabilities Plan
JTF	joint task force
km	kilometers
LACR	light armored cavalry regiment
LCC	land component command
lethal chemical agent	Chemical agents designed primarily to cause death to exposed personnel. Included are choking, nerve, and blood agents. (JP 1-02).
LLR	Low-Level Radiation
LOC	line of communications
LR-BSDS	Long-Range Biological Standoff Detection Systems
MADCP	mortuary affairs decontamination collection point
MAG	marine aircraft group
MAGTF	Marine Air Ground Task Force
MAW	marine aircraft wing

MCC	maritime component command
MCRP	Marine Corps Reference Publication
MCWP	Marine Corps Warfighting Publication
mean lethal dose	(1) The amount of nuclear radiation of the whole body which would be fatal to 50 percent of the exposed personnel in a given period of time. (2) The dose of chemical agent that would kill 50 percent of exposed, unprotected, and untreated personnel. (JP 1-02).
median incapacitating dose	The amount or quantity of chemical agent which when introduced into the body will incapacitate 50 percent of exposed, unprotected personnel. (JP 1-02)
medical force protection	A subset of health force protection; comprised of techniques and procedures that improve soldier wellness and sustainability thriough the prevention, diagnosis, and treatment of injury and disease; injury from environment, occupation , radiation, and biological or chemical agents; and combat stress. (Medical Future Operational Concept, MD 99-003)
METT-TC	mission, enemy, terrain and weather, troops and support available, time available, and civilian considerations
mission-oriented protective posture	A flexible system of protection against nuclear, biological, and chemical contamination. This posture requires personnel to wear only that protective clothing and equipment appropriate to the threat level, work rate imposed by the mission, temperature, and humidity. (JP 1-02)
mission-oriented protective posture gear	Military term for individual protective equipment including suit, boots, gloves, mask with hood, first aid treatments, and decontamination kits issued to soldiers. (JP 1-02)
MOOTW	military operations other than war
MOPP	mission-oriented protective posture
MOS	military occupational specialty
MSC	major subordinate command
MSCA	military support to civil authorities
MSR	main supply route
MTF	medical treatment facility
munitions	Materiels used in war, especially weapons and ammunition. (Approved for inclusion in the next edition of JP 1-02)
MWSS	marine wing support squadron
NAIRA	nuclear accident incident response assistance

NATO	north atlantic treaty organization
NAVMED	Navy medical
NBC	nuclear, biological, and chemical
NBCC	NBC center
NBCDE	NBC defense equipment
NBCRS	NBC Reconnaissance System(s)
NBCWRS	NBC warning and reporting system
NCA	National Command Authority
NCO	noncommissioned officer
NCW	naval coastal warfare
NCWC	Naval Coastal Warfare Commander
NDC TACNOTE	Naval Doctrine Command Tactical Note
NEO	noncombantant evacuation operations
nerve agent	A potentially lethal chemical agent which interferes with the transmission of nerve impulses. (JP 1-02)
nonpersistent agent	A chemical agent that when released dissipates and/or loses its ability to cause casualties after 10 to 15 minutes. (JP 1-02)
NGO	nongovernmental organization

nuclear, biological, and chemical capable nation

A nation that has the capability to produce and employ one or more types of nuclear, biological, and chemical weapons across the full range of military operations and at any level of war in order to achieve political and military objectives. (JP 1-02)

nuclear, biological, and chemical conditions

Combat condition in which one or both combatants possess nonconventional weapons. The combatants may or may not have employed these weapons, but the capability exists. Under nuclear, biological, and chemical (NBC) conditions, forces must take a full range of NBC defensive measures to counter possible enemy NBC attacks. (JP 1-02)

nuclear, biological, and chemical defense

Defensive measures that enable friendly forces to survive, fight, and win against enemy use of nuclear, biological, or chemical (NBC) weapons and agents. Unites States forces apply NBC defensive measures before and during integrated warfare. In integrated warfare, opposing forces employ nonconventional weapons along with conventional weapons (NBC weapons are nonconventional). (JP 1-02)

nuclear, biological, and chemical environment

	Environments in which there is deliberate or accidental employment or threat of employment of nuclear, biological, or chemical weapons; deliberate or accidental attacks or contamination with toxic industrial chemicals; or deliberate or accidental attacks or contamination with radiological (radioactive) materials. (JP 1-02)
nuclear defense	The methods, plans, and procedures involved in establishing and exercising defensive measures against the effects of an attack by nuclear weapons or radiological warfare agents. It encompasses both the training for and the implementation of these methods, plans, and procedures. (JP 1-02)
NWP	Naval Warfare Publication
OCA	offensive counterair
OEG	operational exposure guidance
OPCON	operational control
OPLAN	operational plan
OPNAV	Operational Navy
OPSEC	operational security
OPTEMPO	operational tempo
PAC AFP	Pacific Air Force Publication
pathogen	A disease-producing microorganism. (JP 1-02)
percutaneous	Through the skin. When applied to chemical agents, the term refers to the route of entry into the body. (JP 1-02)
persistency	In biological or chemical warfare, the characteristics of an agent which pertain to the duration of its effectiveness under determined conditions after its dispersal. (JP 1-02)
persistent agent	A chemical agent that when released remains able to cause casualties for 24 hours to several days or weeks. (JP 1-02)
PIR	priority intelligence requirement
POD	port of debarkation
POE	port of embarkation
POW	prisoner of war
PPE	personal protective equipment
precursor	Any chemical reactant which exists at any stage and during any method of the production of a toxic chemical. This includes any key component of a binary or multicomponent chemical system. (JP 1-02)
Prime BEEF	Prime Base Engineer Emergency Force
protection	Measures taken to keep nuclear, biological, and chemical hazards from having an adverse effect on personnel, equipment, or critical assets and facilities. Protection consists of five groups of activities:

	hardening of positions, protecting personnel, assuming mission-oriented protective posture, using physical defense measures, and reacting to attack. (JP 1-02)
protection factor	The expected level of respiratory protection provided by a properly functioning mask to properly fitted and trained users. It is measured as a ratio of air concentration of a given contaminant outside the mask to the concentration measured within the mask. For practical military use, protection factor equals fit factor. (JP 1-02)
protective mask	A protective ensemble designed to keep wearers from breathing air contaminated with chemicals and/or biological agents. (JP 1-02)
PSHDGRU	port security and harbor defense group
PSYOP	psychological operations
PVO	private volunteer organization
QM	quartermaster
R&S	reconnaissance and surveillance
RADCO	rear area damage control officer
RADIAC	radiation detection, identification, and computation
RAOC	rear area operations center
RCA	riot control agents
RED HORSE	Rapid Engineer Deployable Heavy Operational Squadron, Engineer
RFI	requirements for intelligence
riot control agent	A chemical that produces temporary irritating or disabling effects when in contact with the eyes or when inhaled. (JP 1-02)
ROE	rules of engagement
ROTA	release other than attack
RTOC	rear area tactical operations center
SCBA	self-contained breathing apparatus
SCPE	simplified collective protection equipment
SFGA	special forces groups, airborne
SFOB	special forces operational bases
SFODA	Special Forces Detachment A
SIG	signal
SITREP	situation report
SMT	shelter management team
SOC	special operations component
SOF	special operations forces

SOP	standing operating procedure
SPOD	sea port of debarkation
SPOE	sea port of embarkation
SRC	survival recovery center
S/RTF	search and recovery task force
STANAG	Standardization Agreement
STB	Supertropical Bleach
STRIKEWARN	strike warning
SURG	surgeon
subordinate command	A command consisting of the commander and all those individuals, units, detachments, organizations, or installations that have been placed under the command by the authority establishing the subordinate command. (JP 1-02)
surprise dosage attack	A chemical operation which establishes on target a dosage sufficient to produce the desired casualties before the troops can mask or otherwise protect themselves. (JP 1-02)
survey	The directed effort to determine the location and the nature of a chemical agent in an area. (JP 1-02)
SWO	staff weather officer
TACON	tactical control
TACP	Tactical Air Command Publication
tactics	(1) The employment of units in combat. (2) The ordered arrangement and maneuver of units in relation to each other and/or the enemy in order to use their potentialities. (JP 1-02)
TAP	toxicological agent protective
TBM	theater ballistic missile
TCF	tactical combat force
T/E	table of equipment
TFA	toxic-free area
TIC	toxic industrial chemical(s)
TIM	toxic industrial material(s)
TMD	theater missile defense
T/O	table of organization
total dosage attack	A chemical operation which does not involve a time limit within which to produce the required toxic level. (JP 1-02)
toxic chemical	Any chemical that, through its chemical action on life processes, can cause death, temporary incapacitation, or permanent harm to humans or animals. (JP 1-02)

toxic chemical, biological, or radiological attack
: An attack directed at personnel, animals, or crops using injurious agents of radiological, biological, or chemical origin. (JP 1-02)

toxic industrial chemical
: Chemicals from industrial processes that pose hazards to individuals. (USACHPPM Guide 244, The Medical NBC Handbook)

toxic industrial material
: Materials such as chemicals and radioactive material from industrial processes that pose hazards to individuals. (USACHPPM Guide 244, The Medical NBC Handbook)

toxin
: Generally, any poisonous substance of microorganism, plant, or animal origin. (JP 1-02)

TPFDL
: time-phased force deployment list

TTP
: tactics, techniques, and procedures

UJTL
: universal joint task list

US
: United States

USA
: United States Army

USACMLS
: United States Army Chemical School

USAF
: United States Air Force

USAFEP
: United States Air Force Europe

USG
: United States government

USMC
: United States Marine Corps

USN
: United States Navy

USSOCOM
: United States Special Operations Command

weapons of mass destruction
: In arms control usage, weapons that are capable of a high order of destruction and/or of being used in such a manner as to destroy large numbers of people. Can be nuclear, chemical, biological, and radiological weapons, but excludes the means of transporting or propelling the weapon where such means is a separable and divisible part of the weapon. (JP 1-02)

WMD
: weapons of mass destruction

WOC
: wing operations center

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